An Address
ON
TUBERCULIZATION AND DETUBERCULIZATION.

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BY

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THE tuberculization of the race is a grim chapter in human history. The universal distribution of tuberculosis throughout the civilized world is a fact of immense significance. Tuberculosis has accompanied civilization. Tuberculosis is not essential to civilization. Mankind is responsible for tuberculosis. It is a vicious by-product of an incomplete and ill-informed civilization.

If the baneful outcome of misguided civilization has been tuberculization, the rôle of an enlightened civilization must be detuberculization. What an ignorant civilization has introduced an educated civilization can remove.

Detuberculization implies an intelligent and comprehensive movement of mankind towards the eradication of tuberculosis, as the cause, not only of immediate disease and death, but also of a vast amount of devitalization. It is an expression of the far-reaching claim that health and vitality are the inherited right of the human species, and that the entrance of tuberculosis implies unnecessary interference with that right.

The demand for detuberculization is not bounded by the limitations of medical science and practice. It is the voice of a mighty purpose conceived by mankind, to be carried out by mankind, in the interest of mankind. It signifies a conscious effort of the race to rehabilitate itself—to remove the disharmonies and disabilities which tuberculosis entails. It is a *renaissance*.

The events which culminate in tuberculization are of deep human interest. Go back in the history of the race and the individual, and a point is reached where tuberculosis as a morbid factor disappears. Savage man hardly knows it. Like cattle living and breeding in the open, he was free of it. The aboriginal races developed tuberculosis only when, retiring from an absolutely free life in contact with Nature, they began to clothe themselves with the raiment and impedimenta of civilization. The Red Indian, in the State reservations on the American Continent, is to-day pining with tuberculous infection, fostered by the very conditions which were created for his protection.

And so of the individual. All evidence tends to show that the child is not born with tuberculosis, or, at least, that this happens but rarely. The offspring of tuberculous parents are commonly healthy at birth—sometimes unusually fine products. One of the more valuable contributions which recent methods of diagnosis have yielded is the fact of the relative infrequency of tuberculization during the first six months of life. Thereafter the curve of incidence of tuberculosis rises steadily.

We owe to the genius of him, whose presence at our world Council we miss to-day, and to whom be the honour—we owe to him the revelation of the essential cause—the *causa causans*—of this widespread infection. The discovery of the tubercle bacillus illuminated the all-prevailing darkness. So great, indeed, has been the brightness of illumination that other issues seem almost to have been obscured. There is just a danger lest attention be concentrated too much on the tubercle bacillus, and that thereby sight be lost of that other factor in tuberculization, which is of little less account—namely, environment—using the term in the widest sense.

The facts of natural and experimental tuberculization illustrate the point in striking manner. While essential to its production, the presence of the tubercle bacillus is not the *sure* antecedent of successful inoculation. The process of inoculation is slow and uncertain. The bacillus is a parasitic form of feeble growth. It demands specially favourable conditions. These conditions must be maintained more or less uniform, especially at the start. Growth is readily obstructed. The rabbit inoculated with tuberculosis, and thereafter allowed to return to relative freedom of life and movement in the air, has a different prospect in respect of tuberculization from a rabbit similarly inoculated and afterwards confined to its hutch.

In like manner in the human subject, it is impossible to doubt that in countless instances and on frequent occasions tubercle bacilli, in sufficient dose and with sufficient vitality, are introduced, and yet nothing follows because of the absence of favouring environment. Even after successful inoculation, while the feeble parasitic life is struggling to assert itself on the more or less resistant soil, the conditions of environment remain the determinant influence. With sufficient modification of this, there may be added to the equivocal resistance of the body that indefinable something which renders resistance effective. Such modification of environment, in the large sense, is possible from day to day during the prolonged period of incubation—when from the clinical standpoint nothing is evident and tuberculization may not be suspected.

Still later, when there can be no longer doubt as to successful inoculation — when disease has shown its presence by unmistakable symptoms and signs — how frequent is the occurrence of complete arrest of the parasitic invasion! What is the *motif* of so-called sanatorium treatment but alteration of environment and return to the physiological? After its successful adoption, there may remain nothing but faint traces—often determinable only on minute search—of the skirmishing of the defeated force, and the protective arrangements created by the body in response to the attack.

There exists a grave misconception as to the amount of tuberculosis in every civilized centre. It entails corresponding misunderstanding of the needs and methods of detuberculization. It is the outcome of direction of observation too much towards what may be described as the finished product—namely, on the one hand, the advanced case of tuberculosis, and, on the other, the mortality table. The conception covered by the term "phthisis," which unhappily dominates the nosological field, has obscured the larger view and been a stumbling-block to progress. It is time that as physicians and sociologists we recognize the underlying fallacy.

The classic description of phthisis, which continues in medical literature, requires revision. Students of disease must be taught that the enigma of the centuries is now solved by anticipation, and that phthisis—rightly described as the opprobrium of medicine—need no longer exist. The mediaeval portraiture of phthisis must be replaced by scientific delineation of the earliest manifestations of tuberculization, realizable through experimental or clinical study.

The artificial distinction between so-called medical and surgical tuberculosis has been the source of much confusion and error. What we want to keep in view is the fact of tuberculous inoculation. The point of entrance matters less. The natural history of the disease reveals a sluggish spread from point to point, until, if invasion be unchecked, point after point is yielded and the whole system is undermined.

Who would think of limiting the clinical picture of syphilis to that of the grosser visceral lesions? There are numerous points of analogy between the spread of the tubercle bacillus and the *Spirochaeta pallida* throughout the body. The time will come when the physician will regard what now, for the most part, passes current as the diagnosis of tuberculosis in much the same light as the belated news of the foot messenger contrasts with that of the telegraphic wire or Marconi receiver.

The sociologist can no longer content himself with the facts of registered mortality. Each death reminds him of the long procession of months and years during which tuberculization was in progress—a process which, so far as the individual was concerned, might have been checked, had the etiological conception and the antagonistic ideal been practically understood, and a process which, *pari passu* with its advance in the given individual, implied potential tuberculization for many more.

We must look tuberculosis straight in the face. As physicians and sociologists we must realize the unity of tuberculosis in its ever-varying manifestations, and recognize that potentially the seedling of tuberculosis is no less

significant than the full-grown tree. We find solace in the reflection that the conditions for reproduction and development demanded by the tubercle bacillus are essentially conditions which are inimical to human life, and that the conditions desirable, if human vitality is to be more than mere existence, are precisely those which are inimical to the life of the bacillus.

With the facts as they are the duty seems plain—to decline to sanction an existence synonymous with devitalization and lowered natural resistance, which is the likely precursor of successful tuberculization.

Let me give one or two illustrations.

Take, for example, the question of age incidence in tuberculosis. The common view—embodying a tradition which, dies hardly—is that tuberculosis is especially a disease of adolescence and early manhood. The conception is traceable to the fact that about that age tuberculosis often reveals itself through unmistakable appearances, and thereafter runs a downward course. The phenomena of disease are now so striking that the attention of the man in the street is arrested.

> Non frondi verdi, ma di color fosco;
> Non rami schietti, ma nodosi e involti;
> Non pomi v'eran, ma stecchi con tosco.

Yet, after all, these distressing features are mere incidents in the natural history of tuberculosis. In the majority of instances the tuberculous infection, of which the immediately grave activity is the efflorescence, has existed for a long time within the system of the infected person.

Pathological and clinical facts have steadily accumulated which show that, for the most part, the tuberculosis of adolescent and adult life is but the harvest of seed sown years ago. The more carefully pathological examination has been carried out in children dying from all kinds of disease, the more we are forced to believe that the advent of tuberculosis in childhood is most frequent. Statistics of numerous pathological observers tend towards the common conclusion that by the time the fifteenth year is reached 75 per cent. of children have been tuberculized.

From the clinical side no less striking facts have emerged as methods of examination have been refined. In an address before the last Congress at Washington I stated that personal observations in relation to school children at Edinburgh had led me to conclude that at least 30 per cent. of such children presented evidence of tuberculosis determinable by ordinary clinical tests. Subsequent observations have convinced me that the estimate is within the truth. It is strikingly corroborated when, in addition to the determination of physical signs, recourse is had to one or other adaptation of the tuberculin test. The collective evidence from different countries goes to show clearly that it is possible to recognize clinically the existence of tuberculosis in the majority of school children.

If this be admitted, the question arises, To what extent has the tuberculous seedling been directly considered and handled with a view to prevent its passage onwards to the full-grown tree?

From the point of view of detuberculization every tuberculous seedling is of equal significance. It is impossible in advance to say which seedling will abort and which will pass on to larger fruition. Manifestly, if tuberculous seedlings exist to the amount indicated, our standpoint requires to be shifted. The seedlings must be watched and treated with the most careful precision of which scientific medicine is capable. The process of tuberculization must be antagonized at the outset by the methods of detuberculization.

The fact that such a large percentage of the young of the human species become infected by tuberculosis raises in cogent fashion the question of the dependence of tuberculosis on conditions which ought not to be tolerated. Granted that the infant is not born tuberculous and that tuberculization is a gradual process, it must be possible, by intelligent and patient application of the larger preventive measures, to prevent fructification of the seed whose harvest is so doleful.

Take another illustration. Recall the classic description of phthisis—the delicate pink and white colouring, quickly changing, the hectic flush, the cough, the hasty, shallow respiration, the rapid pulse, the pyrexia, the night sweats, the feeble, worn frame, the wasted muscles, the prostration:

> Defessa jacebant
> Corpora; mussabat tacito Medicina timore.

Looking at this picture of unutterable devastation, recall the fact that it is all referable to the successful entrance of a few tubercle bacilli commonly years before. Recall the natural obstacles to successful invasion, the countless barriers, the defensive army of phagocytes. Alongside the tragic and pathetic vision of vanishing life and a disintegrating frame, recall the extraordinary metamorphosis that is effected, even in cases of advanced disease, when poisonous and stifling environment is amended by what we are wont to term "sanatorium" measures—measures which, after all, are essentially physiological.

The aspect of the patient becomes altered as by the magician's hand. The delicate, transparent colour becomes transmuted into the ruddiness of health. Pyrexia melts away. The pulse slows and blood pressure rises. Night sweating and cough disappear. Every function participates in the recovery. The patient's working capacity is gradually restored. He is recreated.

In watching this marvellous metamorphosis from tuberculization to detuberculization—even when the latter falls short of completeness—is it possible to avoid the conclusion that the continuance of tuberculosis is dependent on the will of man? He permitted its entrance and he is responsible for the maintenance of conditions without which the tubercle bacillus is almost powerless. It is high time that he use his right of veto.

Successful use of this power means an intelligent grasp of the principles and methods of detuberculization. These principles are simple and broad. Their application, although of greater complexity, is not beyond the wit of man.

Were it possible to begin afresh the scheme of civilized life, were it possible to undertake anew the creation of cities and the homes of our people, were it possible to place within the recreated dwellings an understanding race, possessed of determination to exclude tuberculosis, detuberculization might be quickly attained. What a magnificent opportunity for the builders of new cities, the moulders of fresh civilization, with the grand purpose of "No tuberculosis"! The architect, the sanitarian, and the citizen would agree in insisting that physiological laws should be paramount, that there should be effective obedience to the larger demands of hygiene in the home, the school, the workshop, the meeting-place, and the cowshed.

Mankind was born into air and sunlight. These are his natural heritage. They are more—they are the irreducible conditions of his life. Other of his needs may be reduced without penalty. In proportion as these primary conditions are reduced, a penalty is exacted in the sense of disturbed function, diminished vitality, disease and death.

Parsimony in light and air—supplies of which may be had for the taking—is a physiological blunder fraught with grave consequences. Imperfect oxygenation means imperfect metabolism. There is no end to the possible disturbance of function. With disturbance of function comes lowered resistance of tissues and the preparation of the soil for successful invasion. All the while the condition of airlessness and sunlessness affords direct advantage to the tubercle bacillus.

How little is the inwardness of the simple truth realized! Mankind, purblind, stumbles about the planet with its marvellous potential of perfect vitality. By reason of his atrophied senses he fails to accept practically the dependence of health on two or three elemental principles, and allows himself to be cajoled into giving up his birthright by meretricious promises of protection and comfort. With astounding folly, he starves at a banquet of the gods.

The civilizations of the world are languishing because men and women prefer an atmosphere of their own creation to that by which they live and move and have their being. Through dread of something they have misunderstood, misrepresented and mislabelled they continue to expel the all-pervading, life-giving essence by which every physiological activity is accelerated. They poison themselves, their children, and their dependants, with the inevitable result in devitalization and disease. If the

picture seem overdrawn I ask you to contrast the atmosphere with which Nature thought fit to surround the race and the miserably mean, half-used and tainted supplies to which it has been reduced through ignorant parsimony.

In the circumstances tuberculization is a strictly natural result—no less natural than detuberculization when the conditions are reversed.

What is true of man is no less true of cattle. The overcrowded, airless, foul and infected byre repeats for the calf the gruesome stages of tuberculization. The first step towards a wholesome milk supply is the recreation of the environment of the cow.

The facts of comparative pathology support the view. A pretty illustration may be had from the experience of zoological gardens, where an extraordinary improvement in health has occurred when animals from warm countries, for whom specially heated houses were formerly thought necessary, have been boldly placed in the open air. The tendency for the caged monkey to become tuberculous is overcome when open-air measures are pursued. Japanese apes brought to London, instead of being placed in superheated apartments, have been kept outside, with the result that, for the first time on record, they have bred under captive conditions, and the offspring have proved strong and vigorous. Similarly, a fine mandril, which had lived in France in a small cage heated with a stove, was transferred in London to the open air, with rapid improvement in health and the development of a magnificent coat. If only man would read Nature's lesson and understand that it is we who "arm the fates to bruise or caress us"!

The highest expression of detuberculization is immunity. The consummation is not unthinkable. It is not impracticable. It is realizable by the framers of new cities in new countries in proportion as physiology inspires the plans and governs the administration.

Then, the living place, private and public, would conform to physiological law. The ideal of the citizen would be light and air. Every apartment would have the maximum supply. Windows would be framed so as readily to admit both. From infancy the citizen would be trained to regard the dual function of the window as vital to life and health, day and night. The nursery and the schoolroom would be redolent of air and sunlight. Every school would be an open-air school. Much of the work would be done outside. Throughout the town open spaces would abound, wide streets would be the rule. Crowding in dwellings, offices, workrooms, factories, meeting places, would constitute a crime. The housing of cattle would be similarly regulated. In such a city tubercle need never appear.

Notwithstanding the faults of environment which have marred the march of civilization, the human race has attained some degree of immunity. Taken as a whole, the race has resisted tuberculosis well. Had it been otherwise the civilized peoples of the world would long ago have been wiped out by the infection.

This natural resistance explains in part the slow and uncertain footing which the tubercle bacillus gains in the human subject. Whether the resistance be the outcome of prolonged exposure of the race to tuberculosis, generation after generation, is a moot point. Attractive as the conception is, its validity is not beyond dispute. Were immunity attainable thus, there should be now a more uniform mortality from tuberculosis among the older civilizations than is the case.

Whether we are to interpret the occurrence of slight tuberculous affections—for example, of glands, or other limited involvement—as contributing, when recovery is established, to immunization is not quite certain. The facts might bear the construction. Yet, having regard to the naturally slow development of the bacillus, it is not surprising that in frequent instances the infection should be arrested at one or other of the successive barriers to which reference has been made.

There can be no doubt as to the increased resistance which the human body offers to the tubercle bacillus under satisfactory conditions of environment. It is more difficult to be positive as to the effect of an arrested local infection in relation to subsequent immunity. Cases of tuberculosis at all stages, which seem to have been arrested, frequently present themselves later with recrudescence of disease. Indeed, the alternation of such remissions and exacerbations is a characteristic of tuberculosis. Such incidents constitute difficulties when we try to formulate conclusions regarding the modus of natural immunization.

What are we to say of artificial immunization? The prospect of vaccine-therapy seems bright with hope. Continuous and watchful use of tuberculin since its introduction in 1890, in relation to very many and varied manifestations of tuberculosis, has convinced me that, when commenced early enough and controlled by accurate clinical observation, tuberculin is capable of hastening the arrest of the spreading infection. The limitations to its use, which exist both on the physiological and anatomical side, are chiefly due to delay in adopting the procedure. If this be set on one side, the view is justified that tuberculin yields results in the direction of detuberculization of the individual which are not certainly attainable by other procedure.

The pressing, practical problem before the world is how to hasten the detuberculization of existing populations in the older civilizations. Faced with the fact that hundreds of thousands die every year of tuberculosis, and still greater numbers are poisoned and crippled by the infection, what are the lines on which to proceed towards detuberculization of the vast crowd?

While each country must be left to work out the scheme of detuberculization on lines suited to the character and traditions and customs of its people, certain general principles are common to every effective scheme. To these broader aspects of detuberculization I would devote the brief time which remains.

Assuming that it is the intention of a community or a nation to detuberculize itself, the first requisite is a clear conception of the issues. The larger facts of tuberculosis must be grasped. There must be a dropping of mere sentimentality regarding particular cases. An effective opposition must be offered to an infective, endemic disease which involves a people, and is dependent on conditions which they themselves have created.

Individuals and communities must be shown that the disease is maintained through ignorance and folly, and that its removal lies completely in their hands. Explicitly and without panic, the people must be taught from day to day that tuberculosis comes of their disregard of physiological law for themselves and for their cattle. Thereby a higher standard of national and personal cleanliness will be evolved, in presence of which the tubercle bacillus will be gradually discounted.

The education will not be mere theory. City improvements will mean the wiping out of the bacillus's breeding grounds. Each new street, each new building, will be an object lesson. The parable of the zoological garden will be transferred to the household. The airless, over-heated, and often polluted cage sometimes called nursery, sometimes school, sometimes hospital, in which the child is allowed to pine will be superseded. The general adoption of *al fresco* nurseries and *al fresco* schools will effect more in a generation than all the hospitals of the world have done throughout the centuries. Make it an offence to rear young life apart from the vitalizing atmosphere, and the detuberculization of a people is inaugurated.

What applies to the environment of the child applies no less forcibly to that of adult life, in the home, the workshop, and the meeting place. The circumstances of the child call for especial consideration because of the accumulating evidence as to the date of primary infection and because the child's environment is not of his choosing or making. It is the compulsory environment of childhood—for the most part vicious—which affords the usual entrance for the tubercle bacillus. The interest of the race demands that this shall be corrected. For if the child be trained from the first in the way he should go, when he is old he will not depart from it. The practical difficulty is not with the child, but with his guardian and teacher, *quem illuminet Apollo!*

If the large issues involved in detuberculization have been truly apprehended, there should be little difficulty in pressing for an effective solution of the problem—how to deal with the vast and varied amount of tuberculosis which already exists in the community and which is reinforced from day to day.

First and foremost, tuberculosis must be sought for. It is not enough to wait until the patient comes to consult.

It is not enough to care for the tuberculous patient when he presents himself. There must be a systematic search. The breeding grounds of tuberculosis must be raided. The tubercle bacillus must be hunted down. The protean character of its manifestations must be kept well in view.

Each manifestation requires its appropriate measure. There is no common measure for all. The individual factors in a scheme of prevention and treatment, while finely adapted to the several issues, must be correlated with care and linked together so as to form an intelligent and concerted whole.

The fault of most antituberculosis effort has been the absence of such adjustment and co-ordination. Attention has been directed unduly to one issue. Sometimes the sanatorium has loomed too much in the minds of those who have handled the problem. Sometimes two factors—alike essential to the process of detuberculization—have been pitted against each other as if they were opposing competitors. Thus the tuberculosis dispensary and the sanatorium have been championed each to the exclusion of the other by zealous advocates, impelled severally by favourable experience of one or other, forgetful that each has its sphere in the larger circle of antituberculosis activity, which, to be effective, must include both and much more besides.

The hope for the solution of the tuberculosis problem—bristling as it does with difficulties of many sorts—lies in the application of an organized plan sufficiently wide to cover all the ground.

On an occasion like the present it would be out of place to enter on details of a comprehensive antituberculosis scheme. Yet the moment is opportune for the delineation of the leading features of a system which, answering the larger needs of the tuberculosis problem, might be applicable to all countries.

In the foreground it appears clear that for every considerable community there must exist a centre, which shall concern itself in the widest possible way with the facts of tuberculosis as it exists in the area. Here every aspect of tuberculization will be dealt with, and every line of detuberculization will be conceived and realized.

Towards the centre inquiries from all sides regarding tuberculosis should be directed. To the centre patients in all stages of tuberculosis should be invited, and likewise persons who may be anxious lest they be tuberculous.

This great collecting centre constitutes the seat of diagnosis and classification of the varying types of disease. The collecting centre comes in turn to be a "clearing house." Each case will receive appropriate guidance and direction, whether at the centre itself, or at one of several residential institutions with which it should stand in organic relationship.

For example, patients for whom there still remains hope of recovery will be passed to the sanatorium with its great possibilities of treatment and education.

Another group, in whom tuberculosis has already played havoc, so that hope of recovery has disappeared, will be transferred to the hospital for advanced cases.

Others, who may have already been treated successfully in a hospital or sanatorium and to whom return to ordinary work might mean physical relapse and corresponding economic waste, will be drafted to the farm colony for prolonged supervision under favourable conditions and simultaneous education on lines of therapeutic and economic value.

The tuberculous school-child will be transferred to a special tuberculosis school in close relationship with the centre itself or with the sanatorium or farm colony, so that during the process of recovery from tuberculosis mental development may not be unnecessarily interrupted.

When the time comes for patients to be discharged from these several institutions they should be referred once more to the centre for such medical superintendence and after-care as will ensure that the recovery, in whole or in part, which has been achieved shall be maintained.

Beyond the patients who are thus drafted from the centre to one or other institutions for residential treatment there will remain a great majority of tuberculous persons for whom satisfactory guidance and treatment will be afforded through the centre itself.

By systematized operations through the agency of doctors and nurses it will come to pass that not a single case of tuberculosis need remain without observation and treatment, and that not one home into which tuberculosis has entered will be unconsidered.

This implies on the part of doctors and nurses a clearness of purpose and accuracy of method which can only be achieved by careful training.

The nurse must be taught to observe and report, and, in co-operation with the doctor, amend all faulty conditions of environment.

The doctor will not only have regard to conditions of environment, but, with keen medical eye, will hold a detailed and thorough review of all the other members of the household—what I have termed the "march-past" of the contacts—with a view to discover other cases of tuberculosis, and more especially the tuberculous seedlings, whose detection means almost certainly detuberculization of the individual and contributes correspondingly to the detuberculization of the community.

Such is broadly my conception of the aims and methods of the tuberculosis dispensary as the centre or base of antituberculosis activity for each community, and the nodus of the several elements which are essential to a complete scheme.

It goes without saying that the several elements which form the connected whole should be made as perfect for their purpose as it is possible to conceive. Too great care cannot be exercised regarding the precise adaptation of each element for its special purpose. Each must have its own purpose. Each must be a perfect machine. There must be no cross-purposes.

Perfection in the individual unit is insufficient unless the several units be correlated with care. As isolated elements they lack much of the strength and value of which they are possible in combination. What is required is the close linking up and interaction of the several units into a combined and co-ordinated scheme, which will take in hand, in understanding and thorough fashion, the varying needs of the tuberculized population in order to effect detuberculization.

This was the *motif* and continues the basis of what is now generally known as the Edinburgh Co-ordinated Antituberculosis Scheme, which commenced with the foundation in 1887 of the tuberculosis dispensary, and has been gradually evolved so as to include the various elements found to be requisite. These comprise compulsory notification, the tuberculosis dispensary, the sanatorium for early cases, the hospital for advanced cases, the tuberculosis school, and the farm colony. The scheme has, in the course of evolution, linked itself with the other authorities and agencies concerned in any way with the treatment and prevention of tuberculosis. This is essential. All influences which make for detuberculization must be brought within a common circle.

If I have allowed myself to project before this great assembly an illustration from a city in one particular country, it is from no local or limited consideration. It is because there has come evidence from many countries that the general plan and evolution of this scheme have proved serviceable as a model in the elaboration elsewhere both of the individual elements in the scheme and of the scheme as a whole.

While details in the actual working of the several elements will necessarily vary according to the views of those who have to organize and administer, prolonged study of the many-sided aspects of this great problem has convinced me that, in proportion as the modes and extent of tuberculization are rightly apprehended, some such comprehensive plan must be undertaken by every nation with a view to detuberculization.

In Great Britain the question seems rapidly ripening towards solution on these lines. For the first time in her history, the treatment and prevention of tuberculosis have been formally dealt with by Act of Parliament. The clauses of the recently passed National Insurance Act relative to so-called sanatorium benefit, which concern primarily persons insured under the Act, numbering about 14,000,000, and which may be extended to their dependants, have been generously interpreted by the Chancellor of the Exchequer as covering in very wide fashion the provision of machinery not only for the treatment, but also for the control and eradication of tuberculosis. Amidst divergence of opinion regarding some parts of the Act, there has been on all hands, both in Parliament

and outside, a remarkable unanimity in accepting the Chancellor's view.

Throughout months of unusual disquiet in the political and social sphere, there has been a fine response to this call for national activity against tuberculosis. A million and a half sterling have been specially voted for the establishment throughout the kingdom of such institutions as may be considered advisable for the whole population. Under the Insurance Act about one million sterling will be available annually for their maintenance, and means are foreshadowed whereby further funds will be forthcoming.

Not content with finding the money, the Chancellor of the Exchequer has proceeded to the practical determination of the form which antituberculosis measures shall take by the appointment of a Departmental Committee. The deliberations of the Committee are in progress, and a report may be expected at an early date upon the considerations of general policy in respect of the problem of tuberculosis, in its preventive, curative, and other aspects, which should guide the Government and local bodies in making or aiding provision for the treatment of tuberculosis.

The movement against tuberculosis has been baptized a crusade. Is the name quite descriptive of the need and purpose? Is it not rather a great reformation—the determined, peaceful emancipation of mankind from misconceptions and prejudices which civilization has entailed, and of which tuberculization for the most part is the result?

Each nation has its part to play in the revolution against a régime which means death and disability on so appalling a scale for its citizens. Each nation must be guided by its own traditions and methods. But the leading principle is the same for all—namely, the restitution of certain rights to the people by the removal of noxious and devitalizing influences. Our common purpose is the detuberculization of the individual and the community, with a view to the ultimate detuberculization of the nation and the world.

In "meditating this deep disease of life, what its far source and whence its remedy," we are faced continually by evidence that tuberculization is less the effect of the malign influence of a hidden foe than the outcome of blindness and unwisdom on our own part. The detuberculization of the world will be synchronous with the dawn of "that great to-morrow when mankind shall mend."

That is the renaissance towards which, to-day, Rome points the world. *Tempus est ut praetermittantur simulacra nostra. Incipienda est vita nova!*

THE END RESULTS OF OPERATION FOR CANCER OF THE TONGUE.

BY

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THE material for this study is based upon the case histories of 38 patients operated on for cancer of the tongue at the Bristol Royal Infirmary during the years from 1902 to June, 1911. It has been possible to obtain subsequent information in 29 cases.

Of the 29 followed through, the nature of the operation performed and the result obtained may be seen in the following table:

	Cases.	Died of Operation.	Died of Weakness or Recurrence.	Recurred.	Apparently Cured.
Partial removal of tongue	10	1	6	2	1
Total removal of tongue	2	0	2	0	0
Partial removal of tongue followed by removal of glands	17	1	5	5	6 (?)
	29	2	13	7	7 (?)

The glands were removed two or three weeks after the excision of the growth in the tongue.

In 5 cases it was necessary to divide the jaw. Four of these recurred, three of them locally; another patient died soon after the operation.

The site of recurrence is known in 14 instances:

Recurrence in the mouth	3 cases
Recurrence in glands	7 ,,
Recurrence in mouth and glands ...	3 ,,
Recurrence in spine	1 case

There is a further case, presently to be mentioned, in which the patient died of cancer of the oesophagus two and a half years later; it is uncertain whether this is to be regarded as a recurrence or not.

In several cases the patient was apparently cured for some considerable time, and then the disease recurred, in one instance in the neck, in another in the mouth. These two men were free for nearly three years after the original operation.

Two patients died of the operation, one of septic absorption and the other of gangrene of both lungs following on a profuse secondary haemorrhage due to the foul state of the mouth.

The figures bring out the superiority of the operation where glands are removed as compared with the older procedure of leaving them if they were not noticeably enlarged. Thus, only 1 patient was cured out of 12 where the glands were left, but perhaps as many as 6 out of 17 where the glands were excised. Moreover, even of the remaining 11 cases in this group there is evidence that the patient was given more chance of relief. Two of them were well and free from recurrence for nearly three years, and another died of cancer of the spine ten months later. In several instances careful sectioning of the glands excised showed no cancer cells. In 2 such cases the growth nevertheless recurred in the neck (in the submental region and behind the sterno-mastoid respectively).

The cancerous growth was preceded in 3 cases by a dental ulcer. In one of these the ulcer was excised and reported by a pathologist to be innocent, but a malignant gland appeared eighteen months later, and the patient died. In another case a papilloma had been removed two years before. One man had extensive leukoplakia and syphilitic fissures, which he used to rub with silver nitrate. Many of the patients had leukoplakia.

A few remarks may be made concerning the patients who might possibly be claimed as cures.

1. *Glands Not Removed.*

E. G., a woman, operated on in 1904 and again for a small local recurrence a few months later, remained free until her death in 1911, which was in no way connected with the cancer.

2. *Glands Removed.*

A. R. has been well now for eight years.

E. T. has been well for five and a half years. There is a tiny nodule in the neck which may possibly prove to be a recurrence. It is being watched.

R. H. has been well for five and a half years.

W. R. is a doubtful case, inasmuch as after two and a half years he was readmitted with epithelioma of the oesophagus 3 inches above the cardia, and died after gastrostomy. At the autopsy there was no other sign of recurrence—if this is to be called a recurrence. (The writer recollects finding an epithelioma of the oesophagus in a man who died after operation for an epithelioma of the lip.)

W. H. has been free from recurrence for two and a half years. He is a schoolmaster, and talks quite plainly.

G. W. has been free from recurrence for nearly two years.

In all the above cases the diagnosis was confirmed by microscopical examination, with the exception of R. H., in which the growth was regarded as so typical that it was not necessary to cut sections. In E. T. the pathologist's opinion was only formed after examining many specimens.

With reference to the size of the growth, in G. W. it was as large as a florin; in the other cases it was not more than ½ inch across. In 2 of these 7 cases there was a gland enlarged in the neck, but it proved to be free from cancer cells.

SUMMARY.

1. The immediate mortality in 38 operations was 5.3 per cent.

2. Of 29 cases 7 were *apparently* cured (well after two years); this gives a percentage of 24.1

3. The results are much better when glands are removed, recurrence being greatly delayed or altogether prevented in many cases.

4. Partial removals of the tongue were followed by *local* recurrence in 6 out of 29 cases.

REMARKS ON THE ESTIMATION OF THE CALCIUM METABOLISM.

WITH A DESCRIPTION OF A CLINICAL METHOD OF ESTIMATING THE AMOUNT OF CALCIUM IN THE URINE AND OTHER PHYSIOLOGICAL FLUIDS.*

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To gauge the condition of the general metabolism of the calcium salts, which are now admitted by all to be of so much importance both in health and disease, an accurate knowledge of the amount at the disposal of the tissues is necessary, and this knowledge has been difficult to obtain.

For instance, some workers have estimated—chiefly experimentally—the amount of calcium taken in with the food, and have compared this with the amount recovered from the faeces.

I have always held that this must be absolutely unreliable in the result. For, although we know the amount taken in by the mouth, we are unable to find how much of this quantity is absorbed, and how much passes through the alimentary canal without being absorbed.

An example will make this quite clear. Suppose that 10 grains are taken in by the mouth every twenty-four hours, and that 5 grains are recovered from the faeces, those 5 grains may represent 1 grain passed through and 4 grains excreted, or it may mean that 2 grains are passed through and 3 grains excreted, and so on. That is to say, a large proportion of what is being absorbed may be excreted, or only a small proportion—there is nothing to indicate which.

Recognizing this difficulty, in 1907 I published a method of estimating the quantity of ionizable calcium in the blood.[1] By this method one is able to determine at any given time the relative amount of ionizable calcium in the blood, and so to get a good indication of the amount at the disposal of the tissues. But, as I then and have since emphasized, this method requires careful interpretation. For instance, a low calcium content in the blood might mean, either that very little was being absorbed or that too much was being excreted. I devised the method for a specific experimental purpose in regard to menstruation, and it served that purpose; but when it is used for routine clinical work, unless careful consideration be given to the findings, wrong deductions—as I have just pointed out—may be drawn from them.

If, however, the blood estimation method be used in conjunction with a method which will indicate the amount excreted a perfectly reliable knowledge of the condition of the general metabolism in regard to the calcium salts may be obtained.

Since the excretions from the intestinal canal are, as I have just shown, useless for the purpose, we must fall back on the urine, in which it is safe to say that, provided the urinary apparatus be healthy, the calcium found should represent a true index of the excretory ratio. If the blood index be low and the amount excreted by the urine also be small, it is fair to assume that not enough calcium is being absorbed. If, on the other hand, the blood index be low and the urinary excretion high, then probably too much is being excreted; and conversely a high blood index and low excretory ratio might indicate that an excessive amount was being retained in the tissues.

I must here point out that, as with the blood estimation when considered alone, so also with the urinary excretion: no true interpretation can be formed of the calcium metabolism by an examination of the urine alone. Because a large amount of calcium was found in the urine it would be ridiculous to state on this evidence alone that the patient was suffering from a calcium surfeit, and to cut off all supplies of the salt. It might be that she was excreting too much, as is the case in exophthalmic goitre, and was depleting her tissues. In such a case, far from cutting off the supply it should be supplemented. Or, again, in some cases in which very little was being excreted it might mean that the calcium was being stored in the tissues, and in such circumstances it would be the worst thing possible to assist in the process by administering more. To be scientific and accurate, when we have no definite clinical evidence or empirical knowledge to guide us, we must use all the means at our disposal to find out what is really happening with regard to the calcium metabolism; and we must not rely on one method alone without we can be quite sure of the interpretation to be put upon the result. In the future the whole subject will, of course, become more empirical, but at present it is far from being so, and I could give many instances of the value of accurate estimations and interpretations. It is, of course, not difficult with the requisite laboratory facilities to estimate chemically the amount of calcium in urine, since large quantities of the latter can regularly be obtained; but such a method of estimation is hardly possible for those engaged in clinical work, so that I think there is room for a reliable clinical method.

The method of estimating the calcium in the urine which I shall now describe owes its origin to Sir James Barr, who for some time has been in the habit of making a rough calculation of the amount excreted by adding to the urine freshly passed the solutions I originally suggested for the estimation of the blood calcium content—that is to say, oxalic acid and acetic acid—and gauging roughly the quantity of the precipitate obtained. On learning from him of this practice I undertook to have the accuracy of his findings investigated chemically. This was done by my assistants working in the biochemical laboratory at the university, with the following results:

1. The sediment sent by Sir James Barr, which was collected from many specimens of urine, was found to consist of pure calcium oxalate. It may be noted here that practically all the calcium present in urine is in an inorganic form, consequently it is precipitated. When the proper measures, to be described directly, were adopted, no phosphates were found in the many precipitates examined.

2. Of the urines submitted by Sir James Barr for chemical investigation of the accuracy of his conclusions the specimen supposed to contain the least amount of calcium was found on analysis to contain 0.008 per cent. of Ca; that supposed to contain a medium quantity was found to contain 0.007 per cent. of Ca; the specimen supposed to contain the largest amount of calcium gave on analysis 0.045 per cent. of Ca.

It is evident, therefore, that the method employed by Sir James Barr is accurate in so far as it is possible to recognize a very large deposit from a small one, and to recognize that a patient is excreting a good deal more than the normal quantity, or possibly, though this is much more doubtful, that he is excreting considerably less. The most obvious difficulty in regard to Sir James Barr's method arose in connexion with the estimation of medium and small quantities, which predominated in the specimens examined, for it was not possible to say whether these were above or below the average quantity. Nor would it be possible with the method employed by Sir James Barr to detect and recognize whether there were an improvement or the reverse during treatment, unless the changes happened to be very marked.

It was, of course, clear that one had to obtain some method of estimating accurately the amount of the precipitate, which we had proved to consist of pure calcium oxalate; and, as I have stated elsewhere, my method of blood estimation cannot be applied in its present form to urine. Consequently our experiments consisted in centrifuging and measuring the deposit in specially calibrated tubes.

Our first difficulty was to prevent the deposit sticking to the sides of the tube, and to get it to lie fairly evenly in the calibrated portion. After trying many things, we finally overcame what threatened seriously to interfere with the perfection of our method by adding alcohol or methylated spirit to the urine and reagent. Next, we found, as we anticipated, that with different rates of revolution of the centrifuge, and with different times spent in the operation, we obtained different results—that is to say, urines and solutions containing the same quantity of calcium gave deposits which stood at different levels according to the circumstances mentioned.

* Read before the Liverpool Medical Institution, March 14th, 1912.

We eventually got over this difficulty by centrifuging a standard solution of an artificial urine, containing a known quantity of calcium in one tube, and the urine to be examined in the opposite one. In this way we were able always to get an absolutely accurate relationship between the two deposits, whatever the rate of revolution or the time employed. So that if the urine showed a deposit of calcium oxalate standing at half the height of the precipitate in the tube containing the standard solution, that urine was found on chemical analysis to contain a quantity of calcium just half in amount of the known quantity in the standard solution. All our results were, of course, verified chemically.

Description of the Method.

A sample from a twenty-four hours specimen of urine is made faintly acid with hydrochloric acid to dissolve any insoluble phosphates present. It is then made faintly alkaline with ammonia, and filtered. Next, 5 c.cm. of the filtrate are placed with a pipette in the special centrifuge tube, which is of the usual size and shape in the upper portion, but tapers at the lower end into a cylindrical extremity of even bore (1.25 mm.), and calibrated into 1 mm. divisions (Fig. 1). A line, with "urine" marked

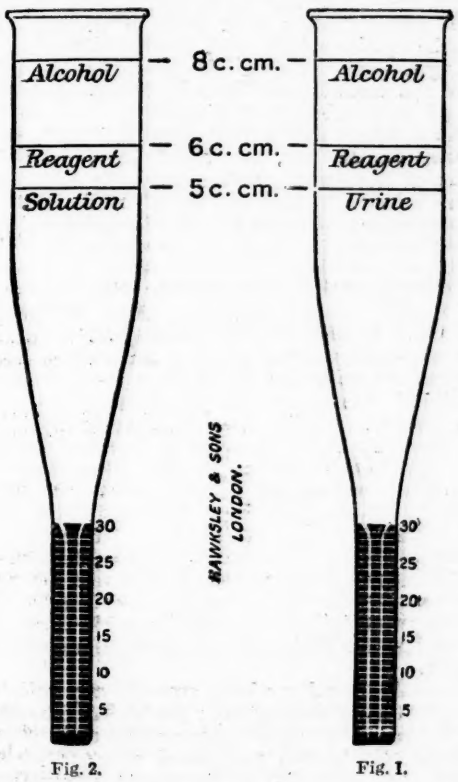

Fig. 2. Fig. 1.

below it, encircles the upper part of the tube at the 5 c.cm. level. Any air bubbles which may collect in the calibrated portion are got rid of with a fine wire or strand of silkworm gut.

Then 1 c.cm. of the reagent, consisting of a saturated solution of oxalic acid in a 5 per cent. solution of acetic acid, is added. The correct quantity of reagent (1 c.cm.) is also indicated by a line round the tube which is marked "reagent." Finally 2 c.cm. of alcohol or methylated spirit are added, as indicated by the line marked "alcohol," and the contents of the tube are thoroughly mixed by shaking. The second tube is then taken, and 5 c.cm. of the standard solution* is run into it with a pipette up to the line marked "solution" (Fig. 2), and any air bubbles removed as before. Next the reagent and alcohol are added, as in the case of the first tube, and the whole is thoroughly shaken. Both tubes, with their calibrated ends packed in wool, are then carefully placed in the opposite buckets of a centrifuge, and are centrifuged for about a quarter of an hour.

On removing the tubes the precipitate will be found to stand at a certain height—say 10 mm. in the "standard solution" tube, while it may stand at 7 mm. in the other, which contains the urine to be examined. As a rule, there is a slight slant on the surface of the deposit. This can be obviated by stopping the machine at the end of one or two minutes and turning the tubes through half a circle. The middle of the meniscus or slant is read off in each tube, and comparison made between them. In the above instance the deposit in the tube containing standard solution was stated to stand at 10 mm., and that in the tube containing the urine at 7 mm.; consequently the urine contains seven-tenths, or 0.7 of the quantity in the standard solution, which is known to be 0.2 per cent., so that the urine contains $0.02 \times 0.7 = 0.014$ per cent. of calcium.

This gives a general equation $\frac{U}{S} \times \frac{1}{50}$ = percentage of Ca in the urine examined, in which U = height in millimeters of precipitate in the urine examined and S = height in millimeters of precipitate in the standard solution. If the urine be found to contain an unusually large amount of calcium, so that the precipitate more than fills the calibrated portion of the tube, the urine should first be diluted with an equal quantity of distilled water, and the final result obtained in regard to the calcium content doubled.

In our experiments to test the accuracy of the method, we found that the difference between the total amount of calcium obtained in this way and that obtained by chemical analysis never amounted to more than 1 per cent. of the quantity present.

I have already indicated how much this research owes to Sir James Barr's initiative and assistance; but I must also express my indebtedness to Professor Benjamin Moore for laboratory facilities.

The expenses of the investigation were defrayed out of the fund for research which Mr. Arthur Smith has generously placed at my disposal.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, April 20th, 1907.

* *Standard Solution.*—0.05 gram of calcium phosphate ($Ca_3(PO_4)_2$) is dissolved in a little hydrochloric acid. This is made alkaline with ammonia, and finally acid with acetic acid. Finally 2 grams of urea are added to the solution, and the whole is diluted up to 100 c.cm. with distilled water. The specific gravity of this solution is about 1015.

A CASE OF OSTEITIS DEFORMANS

IN WHICH FRACTURE OF A FEMUR TOOK PLACE AS THE RESULT OF STOOPING.

BY

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CROUCH END, N.

CASES of osteitis deformans are always interesting. It is only some thirty years ago that Sir James Paget first described this disease, and since then cases have been recorded from time to time, though the disease is undeniably a rare one. Osler tells us that of eight traced to the end, five died from cancer or sarcoma. The following case is of more than ordinary interest, as special opportunities were afforded for witnessing the entire course of this disease, from its earliest apparent onset till its fatal termination, which was accelerated by an accident occasioned by the effects of the disease itself. The whole period covered a space of 4½ years.

The patient was a lady 63 years of age, and the mother of eight children, all living but one, who died in infancy. Her father died quite suddenly at a railway station, when in apparently good health, at the age of 81. Her mother died at the age of 82. There were eight in this family also, three girls and five boys. The eldest son was killed on the hunting field, a daughter died at the age of ten, and another son died last year in New Zealand of "heart and kidneys," at the age of 56. This leaves us with three brothers and a sister, all of whom are still living. A curious feature is that the only living sister, now 61 years of age, is also afflicted with osteitis deformans. The three brothers are aged respectively 53, 50, and 45, and are all in good health.

The patient had an attack of appendicitis in May, 1906. On November 10th, 1906, she had a second attack, and the nurse was then unable to notice anything abnormal about her limbs. On January 12th, 1907, appendectomy was performed by Mr. Mower White. The case, as far as the operation was concerned, made an uninterrupted recovery. When she got up she complained of pain and stiffness in her lower extremities (she had

never complained of these pains before the operation), so I recommended the nurse to give them gentle massage. The patient was unable to stand this, owing to the tenderness of her bones. I may remark here that the nurse remained with her two months after the operation, making a total continuous attendance of four months. After the patient had been walking about for some time it was noticed by both herself and the nurse that her legs were becoming bowed, and that she was shorter in stature than she had been before the operation. On December 24th, 1907, the same nurse was again summoned, as the patient had an attack of oedema of the lungs, and she observed that the disease was progressing, the femora and tibiae having become still more bowed. In December, 1908, the same nurse was called to attend the patient's husband, so once more she had an opportunity of seeing the patient, and she then observed a marked advance in the changing condition of the affected bones. In May, 1909, the patient's husband died somewhat suddenly, causing a severe shock to the patient. The nurse returned to her as companion and attendant for a period of six weeks. She again noticed how the osteitis had progressed and she also noticed how much shorter the patient had become. At one time (before the operation) she was equal to, or even taller than her daughter; now she was many inches shorter. She had great difficulty in walking, and when she did so her body seemed to be tilted forward on her hips. She also complained frequently of pain in her thighs and legs.

A curious incident now occurred. On February 27th, 1911, the patient, while alone in one of the bedrooms, mounted a pair of steps in order to hang some curtains, when a thud was heard followed by groans. When the daughter entered the room she found her mother lying on the floor in a dazed condition, and quite unable to explain how the accident had happened; the last thing she remembered was standing on the steps. There were no broken bones, and all I could discover on examination was a pair of sluggish pupils. The patient complained of pain all over her body, but more especially on the left side. She was able, with an effort, to move all her limbs. In the course of a day or two it became apparent that she had fallen on her left side, as bruises began to make their appearance, and I was able to detect a slight left hemiplegia. Added to this she occasionally had attacks, during which she talked quite incoherently, and had diplopia. There had evidently been a slight haemorrhage into the right brain while she was on the steps, then followed unconsciousness, and hence her fall. The patient made a fair recovery from this attack, but became more helpless in getting about.

On May 10th, 1911, the same nurse was requisitioned for an illness of the patient's unmarried daughter, so that once more there was a favourable opportunity of witnessing the progress of the disease. One day the nurse saw her standing in her bedroom, partially undressed. She described her thus: "Her feet were close together, but her legs were far apart; the body was tilted far forward on the hips; her chest was more contracted than formerly, and her shoulders seemed broadened and rounded." On May 16th the patient was stooping to put out a gas-ring, when her left femur suddenly gave way, and as she fell to the floor she realized that the bone was fractured. Under chloroform I was able to get the ends of the bone well together and the limb was put up in a Liston's long splint and three small ones. Next day she was seen by Mr. Mower White, who agreed that the bone was in good position. There was now no doubt of the diagnosis; the femora were much enlarged and bowed forward and outward, and the tibiae were also bowed in the same direction, but not nearly so proportionately enlarged. When the patient lay on her back with her heels together the knees were widely separated, and there was an arch under the centre of the right femur under which one could pass one's hand. The cranial bones were not enlarged as one would have expected, but the lower maxilla was thickened and protuberant at the chin. The course of the illness from this date forward was also of a somewhat exceptional character. For three weeks the evening temperature oscillated between 99° and 101°, at the end of which time the temperature became normal for a fortnight. Coincident with this change was a most altered condition of mind. The patient became wandering, restless and delusional, and at times did not know those about her. On May 25th she began to feel sick. The tongue was perfectly clean, and there was no stomach trouble. The next three days she could keep nothing down, returning even the iced water she took, so had to be fed rectally. Her pulse became quick and compressible. Dr. Horder kindly met me in consultation on June 13th. There was no pneumonia but symptoms of a failing heart. She now took a turn for the better, and kept down an ounce of whey with twenty drops of brandy every hour. She was quite unconscious or incoherent till June 17th, when she suddenly had a lucid interval. I was sent for immediately, and was able to get her to sign her will, which she had had drawn up the very day her fracture had occurred. In the evening of that day her senses were preternaturally alert; she expressed great relief at having signed her will, and for the first time for many years (for she was chronically deaf) she distinctly heard the birds singing and her children's voices in the garden. The next two days her mind was still exceedingly active, though the period of hyperacusis had passed. On the evening of June 20th the temperature suddenly ran up to 104°. At 10 a.m. the next morning it was normal again, only to ascend during the day to 102°, about which level it remained till June 25th, when she passed away at 4.15 a.m.

The interest of this singular case rests in the following facts: first, that the whole life of the osteitis deformans could be traced from onset to exit; secondly, that no cranial bone was affected except the chin-point of the lower maxilla, to which allusion has already been made; and lastly, that the onset of this disease immediately followed an operation for appendicitis. Whether this last was merely a coincidence, or whether the general shock of the operation affected the patient's nervous system in such a way as to produce a trophic degeneration in the bones of the lower extremities, it is, of course, impossible to say. No autopsy was made, but it was discovered after death that though the ends of the bone had been placed and kept together in excellent position for a period of six weeks all but two days, no sound union had been established, as the lifting of the leg produced cracking and bending of the affected femur.

TESTS OF INTELLIGENCE.*

By W. A. POTTS, M.A., M.D.,

LATE MEDICAL INVESTIGATOR TO THE ROYAL COMMISSION ON THE CARE AND CONTROL OF THE FEEBLE-MINDED.

LAST year in one of our local medical societies an interesting paper was read on Certificates of Lunacy, the writing of which may devolve on the majority of us at any time. A paper dealing with tests of intelligence will perhaps be equally useful. In a certificate of lunacy facts indicating insanity at the time of examination are required; many of the tests I shall describe furnish facts of this kind, and may establish a diagnosis; they would not suffice for a patient with a fixed delusion, if there were no intellectual impairment, nor could they command the attention of a case of acute mania. In many lunacy certificates, however, they are useful, and also in other circumstances where a certificate of mental capacity is required; for instance, when a person contemplates making a peculiar will, or wishes to make a will of any kind when he is suffering or has suffered from disturbance of the mental health. In such cases explaining the provisions and effects of the will, and enumerating all the near relations, with the reasons for ignoring some or all of them, may constitute an ample justification for the certificate required, and it may be neither necessary nor wise to proceed further. On the other hand, certificates may be strengthened by the statement that certain tests were quickly and accurately performed. Sometimes it is important to have available definite evidence of this kind.

A note should always be kept of the tests used, but it is usually wiser not to give details till one is asked for full particulars, or is called into court. The legal mind, versed in the difference between statutory right and wrong, does not always understand that partial lack of intelligence and control may constitute irresponsibility, but is often satisfied by the explanation that certain suitable tests could not be performed.

Till recently there have been scarcely any satisfactory schemes for testing intelligence; the ordinary investigator merely examined the capacity for reading and writing, for elementary calculations, and asked one or two simple questions, such as the day of the month and the name of our King, without much regard to the age, previous training, or environment. During the last few years, however, the Report of the Royal Commission on the Care and Control of the Feeble-minded, the large amount of propagandist work some of us have accomplished, and the institution of medical inspection in schools, have focussed the attention alike of the public and the profession. Last summer, both at the National Conference on the Prevention of Destitution and at the meeting of the British Association, papers on mental tests were read. So many have been suggested that the ordinary medical man is a little perplexed as to which system to choose, especially as some schools claim that theirs is the one reliable method, and certain authorities, after issuing a final scheme, have introduced considerable modifications. Let me say at once that it does not do to pin one's faith to any single scheme; it is necessary to study several, and use the best tests from each as occasion demands.

In this paper I do not propose to discuss the diagnosis of amentia and dementia. I would, however, remind you that stigmata of degeneration are not without value, and

* A paper read at the Birmingham Branch of the British Medical Association on November 9th, 1911.

that the appearance, manner, carriage, and gait are of supreme importance. Indeed, as I have often pointed out, the attitude of a patient towards a mental test, and his behaviour during and after the execution of it, are frequently of more importance for diagnostic purposes than the fact whether he did it correctly or not. Those patients who realize their shortcomings are the more hopeful. A child who scribbles aimlessly, on being asked to write a word, is more defective than one who admits he cannot. It is not possible to overrate the importance of a thorough physical examination in every mental case, and of a reliable family and personal history. Indeed, as regards many congenital defectives who come before us when young adults, the number of situations they have passed through, seven or eight in a year at the least, and the small amount of the best wages earned, almost determine the whole matter.

The environment and opportunities must always be considered. The child who told me that the family cat was an animal with four legs which drank beer, was not necessarily wrong according to his experience. Nor was a boy of 12 who could not read mentally defective; really he, or at any rate his father, was particularly sharp, for they had eluded the school attendance officers for years; even when I put the authorities at once on their track the couple had again vanished.

The tests I am going to describe are not adapted for the deaf or dumb, nor for those who are partially afflicted in that way, nor for those with severe visual defects. Those are possible explanations of apparent mental defect which must be excluded by examining the hearing and visual power and the condition of the throat. In his report for 1909 the school medical officer for Wimbledon drew attention to 107 children two or more standards below the average for their age; only four of these were mentally defective. In twenty-four the eyesight was defective, while thirty were from very unsatisfactory homes; they were ill-nourished, undersized, and neglected.

Those who attend to all the points I have indicated will appraise at their true value the results of tests of intelligence. These tests have their limitations; we are on the right tack, however, in evolving and using definite systems; we are then better able to say, not merely that a child is backward, but how backward he is, and how far he will improve with training. After an ordinary examination a good working prognosis can often be given, but there will be fewer mistakes if we use a definite measuring scheme rather than continue a mode of investigation which at the best was unscientific. Some of the tests are also of use in difficult cases, such as moral defectives, where we are quite satisfied ourselves but cannot otherwise write down evidence which will convince the layman and the lawyer. They are valuable, too, for recording the progress of lunatics; as dementia increases, instead of saying that the intelligence, power of initiation, and other capacities appear to be failing, we can write the patient down as Standard M one year and Standard N the next. When a case of melancholia is under treatment, it is more satisfactory to measure the improvement than merely say "the patient appears to be better."

The first set of tests are those of Dr. Sante de Sanctis, Professor of Experimental Psychology in the University of Rome; these are good tests, few in number—six—and such that any one can use them in an ordinary examination.

First Test (five balls, about 2 in. in diameter, of different colours—red, green, blue, yellow, and purple).—Give me a ball. (Note time of response; then cover up the balls.)

Second Test.—Which is the ball you gave me? (Note time of response.)

Third Test.—Do you see this piece of wood? (A cube with 1½ in. sides.) Show me all that are like it in that group. (A group of five cubes, three pyramids, and two parallelepipeds.) (Note time of response.)

Fourth Test.—On this card (a card with ten rows of fourteen figures each, the figures being a triangle, an oblong, and a square placed at random) mark every figure that you can find like this (a cube). (Note time, errors, and omissions.)

Fifth Test (twelve cubes varying from 1 to 3 in.).—Here are blocks of wood like what you saw on the card.

(*a*) How many are there? (Child allowed to count.)

(*b*) Which is the largest?

(*c*) Which is the one farthest from you?

(Note time, errors, and omissions.)

Sixth Test.—Four questions:

1. Are large things heavier or lighter than small things?
2. How does it happen that sometimes small things are heavier than large ones?
3. Do distant things look larger or smaller than near ones?
4. Do they only appear smaller, or are they smaller?

Of course, the patient must be put at his ease; it is best to treat the procedure as a game. Rest a little after each test. A question may be repeated three times; no response then is failure.

An additional advantage of these tests is that we can classify by the results, thus—

1. There is a high degree of intellectual defect when the patient does not get beyond the second question.
2. There is a moderate degree of defect when he does the fifth with difficulty and many errors.
3. There is a mild degree when he fails at the sixth only.
4. A child who does all with normal rapidity is not defective.

The next test—Kraepelin's reckoning test—which is useful for measuring the action of tea, alcohol, and drugs, which affect mental processes, is often more useful for checking the progress of a case of melancholia than for diagnosis.

The original test was to add a large number of figures together as rapidly as possible; the latest modification used at Munich by Professor Kraepelin is to have a book like a school copybook. Each page has 10 columns, and each column 36 digits. In order to economize space, and at the same time make the test a little more complicated, the digits are added in pairs, the second of the pair being linked with the next, so that each digit except the first is used twice. The sum of each pair is written down on the right hand side, only the units figure being put down if the sum exceeds 9. Thus—

3	
4	7
8	2
6	4
9	5
2	1

The patient must first be carefully instructed; then, after a few seconds' warning, the order to start is given. At the end of each minute the examiner calls "Stroke"; the patient then makes a dash under the last sum, and goes on again as hard as he can; the test continues for fifteen minutes. The examiner then adds up the number of sums, counts the corrected and uncorrected errors, and what is more important, counts the number of sums done in each successive minute. From the latter records we often get definite evidence of the unduly rapid onset of fatigue in an exhausted or abnormally constituted brain.

The most important system is that of Binet. Binet's tests are open to criticism; some of them are too difficult, and the standard has been fixed too much by school records rather than by an estimate of success in ordinary life. All the same the series is excellent; it is most comprehensive, and will appeal particularly to the school medical officer who is not working against time, because with these tests the child can at once be placed exactly. Goddard, the energetic medical superintendent of the New Jersey Training School at Vineland, after trying it carefully in 400 mentally defective children and 2,000 normal ones—a stupendous task—and correlating his results by other methods, expresses unqualified approval. He merely points out that one or two of the tests as designed in France must be modified for our countrymen. We owe a debt of gratitude to Binet, not because all his tests are original (for many are not), but for systematizing and standardizing as he has done. It is, however, too elaborate a system for the ordinary practitioner, who will do well to pick out some of the most useful. I will give only a few tests illustrative of Binet's method.[1]

[1] Those who wish to go into the system in detail can either study Binet's papers, published in *L'Année psychologique* and elsewhere, or perhaps more conveniently the excellent compendium of Goddard.

The latest authorized version consists of five tests for each year of life from 3 to 15; when used for adults we class them as 4-year-olds, or whatever their standard may be. The principle is that the tests for each year are such that a normal child of that age can accomplish them, while a younger one cannot; the system was evolved by "studying normal children and finding out what they can do, and picking out of all those things those that are so fundamental and human that they do not depend upon training."

Binet and Simon in 1906 proposed thirty tests, in which no account was taken of the age of the child or of his training. In a paper published in 1908 they evolved a set of tests for each age of the child and nearly eliminated the element of training, presenting therefore "a measuring scale for intelligence." This has been modified again, and the same number of tests (five) introduced for each age. If a child succeeds in all the tests for his age he is normal; if only for a year younger he is backward to the extent of one year; if he is more than three years backward he is mentally defective. Before his standard is settled, however, a correction must be made. The child must be advanced one year for every five higher tests in which he succeeds. For example, a 9-year-old child fails in two of the 9-year-old tests; he appears, therefore, to be only 8 mentally. On further examination, however, he does three of the 10-year-old tests; these, added to the three of the 9-year-old ones he had already done, make six in all; he is therefore advanced a year and classed as normal. We begin with the tests for the age of the child, or the age we think he is mentally.

Tests for a 3-year-old child:

1. The child is asked to point to its nose, its eyes, and its mouth.
2. He repeats a sentence of six syllables—for example, "It rains. I am hungry."
3. He repeats two figures, 7, 2; the figures being pronounced distinctly, one half-second apart, without emphasis on either.
4. He is asked his family name.
5. He is shown a picture.

Binet uses three pictures, the essentials of which are that they represent a situation, but contain only one or two objects and one or two figures. I have not reproduced Binet's pictures; I use two, one of which contains things familiar to Birmingham children.

First Picture.—A wooden cradle on a river in flood, containing a baby and a kitten.

Second Picture.—A bricklayer on a ladder placed against scaffolding.

A child of 3 can only name the things in the picture; he cannot describe any actions. The pictures are used again as a test at 7 years, and the child is then expected to describe the situation.

At *Four Years* he is asked if he is a boy or a girl, to recognize three familiar objects (a knife, a key, a penny) to repeat three figures, and to compare two lines (two parallel lines 3 cm. apart, one 5 cm., the other 6 cm.)—which is the longer line? Hesitation in this test counts as failure.

At *Five Years* he has to compare two weights of equal size and appearance, to copy a square with ink, to count four pennies in a row, and to make the two halves of a card cut along the diagonal into a figure like an uncut card.

At *Six Years*, among other tests, comes the one of aesthetic comparison, "Which is the prettier?" Binet uses six heads of women in pairs, the one pretty, the other not. He also tries the execution of three simultaneous commissions: "Do you see this key? Put it on that chair. Then shut the door. After that, bring me the box that is on the chair."

At *Seven Years* Binet uses unfinished pictures, such as heads with the eyes, nose, or mouth not drawn in. "What is wanting in that picture?" He also makes the child count thirteen pennies placed in a row; each penny must be touched with the finger at the same time as the child names the number.

At *Eight Years* a child should be able to count backwards from twenty to one in twenty seconds without making more than one mistake, and should be able to compare two things from memory, such as a butterfly and a fly.

At *Nine Years* he is tested with weights, and at *Ten Years* with questions of comprehension. "What ought you to do when you have broken something that does not belong to you?" At least twenty seconds are allowed for an answer, and only three out of five such questions need be answered correctly.

At *Eleven Years* we say to the child, "I am going to tell you a sentence in which there is nonsense. You listen carefully and see if you can tell me where the nonsense is." Then we read very slowly:

1. "An unfortunate cyclist has had his head broken and is dead from the fall; they have taken him to the hospital, and they do not think that he will recover."
2. "The police found yesterday the body of a young girl cut into eighteen pieces. They believe that she killed herself."

Some people object to these horrors, but children and the mentally defective usually revel in them. At the same age—11—Binet tells a child to say as many words as possible in three minutes, such as "table, board, shirt, carriage." This is an excellent test. At least 60 words must be given. Some get to 200.

At *Twelve Years* Binet asks for simple rhymes, and the repetition of a sentence of 26 syllables such as "Children, it is necessary to work very hard for a living; you must go every morning to your school"; and so the tests go on. Those I have described are some of the principal ones.

Abelson is the first worker, as far as I know, in this country who has been able to devote the time necessary to carry out similar investigations on a large scale. He has evolved a small number of tests of his own; he aims at correlating the results by the degree of competence for work in the ordinary world rather than by school records. One of his principles is that the results must be marked either by time, or for accuracy, but never in both ways; in most of them he uses a stop-watch, and so long as the child is working accurately urges him to go faster, but checks him when the work is inaccurate. The patient is placed by his time record. In practice I have found some of his methods distinctly useful, but have not yet had an opportunity of trying them on a large scale. Dr. Abelson has most kindly supplied me with certain details. The chief tests are—

Tapping.—The child is given a pointed instrument, and told to tap as fast as possible for ten seconds inside a 3 in. square on a piece of paper. The first attempt is for preparation, the second and third are recorded.

Crossing out Rings.—An irregularly disposed line of small rings. Three attempts, second and third recorded.

Fig. 1.

Crossing out Sets of Dots.—Five lines of dots in sets of three, four, and five in any order. The child is told to cross out all the fours as quickly as possible. Three attempts as before.

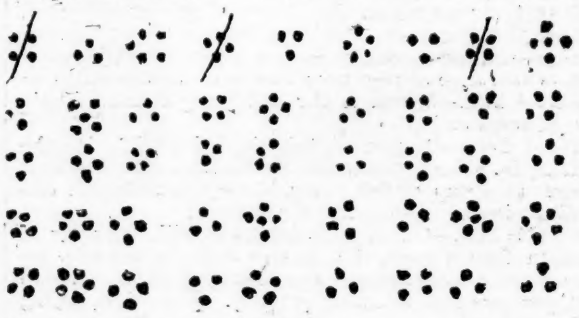

Fig. 2.

Memory for Sentences.—Seven sentences are used, the first a short one and each of the others a little longer than the preceding; marks according to accuracy.

There is also a memory for names test and a memory for commissions test; in the latter the later commissions are very complicated—for example, "Put the book, the

saucer, and the penknife upon the gas-stove, then put the brush next to the spoon, then go and open the door, then sit down on the armchair, and then get up and put the matches which are on the table inside the matchbox."

There is a discrimination of lengths test, and one or two others before reaching the tests with geometrical figures. For these tests the child is practised for a week in recognizing a triangle, a circle, and a square; he is then provided with several sheets on which two or more of these figures are drawn, the figures frequently overlapping. There is a different colour for each of the three figures. The figures are then covered and the child is given an order, such as "Point inside both circles," or "Point in the triangle and square but not in the circle," according to the drawing he has at the moment. Each order is given twice carefully, making sure the child understands; the figure is then uncovered and the stop-watch started. If it is done incorrectly, the figure is covered and the order given again; the time taken in this case is added to that taken in the first instance. Abelson has eighteen geometrical figure tests; they promise to be of considerable value.

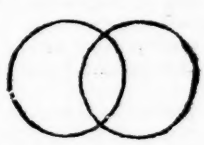

Fig. 3.

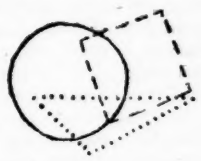

Fig. 4.

An excellent single test recommended by Tredgold is to send a mentally defective person to open a locked door, the key being hung on the wall just by the door. An intelligent child will use the key, a mentally defective one will come back and say he cannot open the door. A mentally defective child or adult, if told to hold out his hand or put out his tongue, frequently maintains the position till told to desist.

I could describe many other useful tests; I have explained sufficiently, however, the lines upon which we may work to try and obtain facts which will corroborate our opinion as to the presence or absence of mental defect.

ARREST OF SEVERE EPILEPSY IN A CHILD AGED FOUR.

By J. STEWART MACKINTOSH, M.D.Durh., M.R.C.S., L.R.C.P.,
HAMPSTEAD.

I THINK the following case worth recording in detail, because it affords clear evidence that it is not necessary to abandon hope in a case of ingravescent epileptic habit that does not yield promptly to routine treatment.

The child was born on March 4th, 1906. I attended the mother in her confinement, and induced labour at the beginning of the ninth month at the suggestion of Dr. Herman, who saw the mother early in her pregnancy for retroversion of the gravid uterus, and judged that labour would prove difficult at term from the size of the child. He weighed 8 lb. when born.

The child was breast-fed for two months, and, the maternal milk then failing, he was bottle-fed with diluted cow's milk, cream, etc., with occasional raw meat juice, on which he throve till 9 months old. About this time the family left London for the country. He was fed on Savory and Moore's food till 2 years old, and the mother then gave him "gravy and bread, puddings, etc.," and a little later added finely-chopped raw meat to his diet, which therefore from the age of 9 months consisted chiefly of soft farinaceous foods, according to the present custom of feeding young children. However, up to the age of 2½ he was apparently a healthy child, good tempered and happy, but precocious for his age and restless in temperament.

In August, 1908, the mother came up to London to be attended by me in her fourth confinement. When she returned home two months later she found a marked change in the child for which no cause could be ascribed by those she left in charge. He had become irritable and spiteful towards his nurse and two elder brothers (both of whom were healthy children); he had also become very frightened of the trains which ran near his house, though formerly they delighted him. During the ensuing year he suffered from "gastric attacks" which appeared to have been due to carbohydrate dyspepsia, and the change in temperament continued.

In the spring of 1909 he was twice bitten by a chained bulldog and suffered a severe nervous shock. Following this he grew shy of strangers and said passers-by "looked at him." He would no longer play with his brothers, and would carry on conversations with the moon, the rain, or the wind. In September, 1909, he was seized with a characteristic epileptic fit when playing on the golf course. It lasted about ten minutes. The fits recurred three or four times daily. He was seen by a doctor, who prescribed potassium bromide gr.v t.d., and was examined by Sir Victor Horsley for a possible focal lesion, with negative results. Sir Victor Horsley thought the prognosis unfavourable. The potassium bromide checked the fits for six weeks, after which they returned. He was then seen by a well-known specialist in diseases of children, who also thought the outlook grave, but suggested that his enlarged tonsils and adenoid growths should be removed. This was accordingly done, the tonsils being enucleated by Mr. Waugh.

No immediate benefit as regards the fits resulting, a neurologist who has made a special study of epilepsy was consulted. He also was not hopeful of the future, but recommended a trial of Gélineaux's dragées, which contain potassium bromide, picrotoxin, and antimony. This did not, however, improve the fits, which had increased (possibly temporarily) in number after the operation, and, on the mother giving on her own responsibility two dragées at a time instead of one, the seizures rose in number to thirty per diem. The mother now despaired of a cure, and brought the child to me asking if I could think of any other procedure likely to improve matters. In view of the history of "gastric attacks" I cut down the carbohydrate element in the diet to a minimum,* and prescribed the following mixture to be taken thrice daily: Sodium bromide gr.iv, strontium bromide gr.ij, tincture of belladonna ♏iv, orange flower water to ʒij, and also urged that the child should live in the country under the quietest possible conditions. Small doses of calomel were also given for a few days.

The result far exceeded my expectations, for from this time (September, 1910) onwards the fits rapidly diminished in intensity, though not at first in number, until they became imperceptible. At Christmas, 1910, the child showed some symptoms of atropism with visual hallucinations, and, becoming frightened, had two slight fits. On cutting out the belladonna from the prescription no further fits occurred, except on one occasion, when after a fright a single attack occurred. But apart from these interruptions, the child has been free from fits for ten months; he has no gastric trouble, and his mother reports his temperament has changed again to that of a normal, if somewhat excitable, child, and his intellectual progress, which came to a standstill, if not worse, with the onset of the fits, has resumed its due advance.

I do not think the arrest of the fits should be ascribed offhand to a lucky combination of drugs. The removal of "adenoids" has at times been attended with success, though not necessarily immediate, after drugs have failed. I believe there was a source of irritation in the carbohydrate dyspepsia with which adenoids are frequently associated. A child with nasal obstruction can only make four chews on an average between each breath, as he is using his mouth for respiration as well as mastication, whereas the normal child bites his mouthful fourteen to twenty times before gulping the bolus.

The mere removal of the adenoids and tonsils is, however, not always sufficient to cure the digestive troubles. The child's mastication requires re-education in order to deal with his carbohydrates, and there appears to be in some cases a chronic infection of the colon, subject to recurrent exacerbations, which requires treatment before the source of irritation can be removed. It is worth noting that in this case the tonsils were totally ablated, as it is now, of course, well known that the stump of a guillotined tonsil may still be a source of infection of the alimentary tract if sufficient tissue be left.

As regards drugs, the sodium and strontium salts were selected in case the failure of potassium bromide was due to idiosyncrasy. The occasional value of belladonna when bromides have failed is well known. Orange flower water had much repute on the Continent as an antispasmodic before bromides came into use, and cures of epilepsy have been ascribed to its use as a simple. The value of "antispasmodics" comes in as a check to the "habit" after the original source of irritation has been removed.

It is of course difficult to forecast what the future may have in store for the child whose case I have set forth. Some writers on epilepsy draw a strong line of demarcation between "essential" and "accidental" epilepsy, assigning the former term to cases in which, with a strong family history, fits arise without apparent provocation in children dull of intellect, unexcitable, commonly dark in complexion and sallow of skin; the epithet "accidental" being reserved for those cases in which the child is of highly neurotic temperament and the fits are traceable to a definite predisposing and frequently maintaining cause.

* An excellent account of the range of dietary suitable in carbohydrate dyspepsia is found in *The Child's Diet* (Curgenven). Lewis and Co. 1905. 1s. 6d.

If this distinction be admissible, the case here described belongs to the latter category, being very excitable, blonde in complexion (though sub-brachycephalic) and, up to the time of onset of the fits, intelligent to the point of precocity. There was no epileptic history on either side. There seems, therefore, reason to hope that, if the fits do not eventually return, the child may grow up to fill a useful place in society instead of falling a victim to the progressive mental degeneration which at one time threatened to be his lot.

P.S.—About a year after the apparent arrest of the fits the mother reported that epileptiform attacks had reappeared, occurring at bedtime and on awaking. On inquiry I learnt that the child had, in contravention of strict orders to the contrary, been having porridge for breakfast. Unfortunately, stopping this forbidden luxury has produced no amelioration of the fits up to the present, but the child continues to progress otherwise bodily and mentally. Just before receiving the proof of this paper the mother reported to me that she had noticed "something like a piece of tapeworm, about 4 in. long," in the child's stool. Unfortunately she did not save it for inspection, but thought it was segmented. It may, of course, have been mucus, but it should be noted that the child was fed with raw meat for a time. It would be interesting if a tapeworm were at the bottom of the trouble, and should this prove to be the case I will report it.

ON RADIUM EMANATIONS IN MINERAL WATERS.*

By T. PAGAN LOWE, M.R.C.S., L.R.C.P.EDIN.,
SURGEON TO THE ROYAL MINERAL WATER HOSPITAL, BATH.

THE year 1903 was an important one in the history of balneology, for then it was that Ramsay and Soddy demonstrated that helium was one of the products of the disintegration of radium; in the same year Professor the Hon. J. R. Strutt discovered radium in the deposit of the Bath waters. In the same year, again, the late Lord Blythswood published in *Nature* the fact of the radio-activity of the gases from the springs of Bath.

In his presidential address to the Section of Balneology of the Royal Society of Medicine in October, 1909, my friend Dr. Leonard Williams attempted to redress the balance between science and empiricism, which, in matters balneological and climatological, had, in his judgement, too long shown a bias in favour of the latter. The burden of his argument, as it seems to me on re-reading that address, was that the methods which we employ exercise an influence upon the internal secretory glands, and he brought a considerable mass of evidence in support of his theory. He did not, however, offer any explanation as to how and by what means these internal secretory glands were influenced by such methods. I think the time has come when we can venture a step further by suggesting that the means by which our results are produced are, in some cases at any rate, brought about by radio-activity.

[Mr. Pagan Lowe then gave an outline of Sir William Ramsay's observations, recently reported,[1] and continued as follows:]

The radio-activity of all mineral waters exists only at the source, and such waters rapidly lose this quality. Nevertheless it is possible by artificial means to render them permanently radio-active. Does the therapeutic potency of natural mineral water depend upon niton alone, or is the credit to be divided between it and the other, the chemical constituents—that is with those constituents which we have till now endowed with the entire beneficence? We are told that radio-active waters can be prepared by adding one milligram of radium sulphate to one litre of distilled water, which can then be used as a subcutaneous injection without harm. Is this artificial water as potent as natural radio-active water, or does it more quickly lose its acquired qualities? Can the radio-active water, as we find it at our springs, be used as a subcutaneous injection with advantage? These as well as other questions present themselves for our consideration.

Such, for instance, as those connected with the statement that niton, although it has the power of rendering all substances radio-active, cannot itself, according to some authorities, be absorbed by the skin. If this were true it would seem that bathing, as far as any special benefit from the radio-activity is to be obtained, was at a great disadvantage. But a little more consideration modifies this view. In addition to the immediate relief which experience tells us occurs from mineral water baths, such, for instance, as increased mobility and lessened pain, the patient is in the best position for taking the full advantage from niton. The orifices of the body are soaked in it, and the surrounding air is more or less saturated, and thus when the patient is in the bath, with his nose and mouth just above the surface of the water, he must be most favourably situated to reap the benefits of the induced radio-activity. Moreover, contrary to the belief of those who say that niton cannot be absorbed by the skin, Professor Lazarus is of opinion that it can, and in this he is supported by Ramsay and others.

In the administration of baths much longer periods of immersion seem to be called for, and I have no doubt that the custom of spending many hours in the bath, as is the custom at Leukerbad and other resorts, has a good deal to recommend it. The large public baths, as used there, however, seem to be inadvisable, and I cannot but think that the small bath-room, due regard being of course given to ventilation, is preferable. The probability is that niton is not too strong, and we want to concentrate, perhaps to augment, it as much as possible.

Some authorities are of opinion that natural waters are not sufficiently radio-active to be of much service therapeutically, but on this question of their potency there are very conflicting views, and Professor Farr, of New Zealand, in an interesting discussion on the effect of radio-active spring water on trout, refers to radium emanation (niton) as a gas which physically is a hundred thousand times more active than radium.

Hitherto details of the effects of niton given off at the fountain head are not very numerous, notwithstanding the immense amount of research which has been made with regard to radium and artificially prepared radio-activity. It is urgent that those of us who have access to natural radio-active waters should fill up the deficiencies. Fortunately, at Bath the waters are sufficiently charged with niton for all purposes, and may be considered saturated, and we have 500,000 gallons coming up daily at a temperature of 118° F. There is also available more than 5,000 litres of gas.

Has the presence of niton any subtle action on the salts of magnesium, sodium, lime, and so on, which are found in indifferent waters rendering them more absorbable or potent when brought into contact with mucous membrane? The free absorption of radio-activity by mucous membranes and by the lungs will probably alter our treatment by those routes, and we shall in the future rely upon them much more. Inhalations will be more frequent and drinking more resorted to, for longer time and in greater quantity. The same, too, will apply to vaginal and rectal douching. This latter—the so-called Plombières method—is very popular at the present time at certain spas. Certainly its effect in suitable cases is very striking. It is also almost certain that the future will see a great increase in the combined use of electricity and radio-active waters.

Sir William Ramsay, referring to the ingenious spraying machine invented by Mr. Jones, the engineer to the bathing establishment of Bath, for use in throat and eye affections, suggests that the natural gas should be used instead of the mineral water. If this were adopted—and I have no doubt it will be—Ramsay is of opinion that "an agent nearly twenty times as potent would be available." He also thinks that in a similar way niton might be applied directly in the treatment of local rheumatism, especially if the patient were insulated and connected with the negative pole of a battery. He further outlines a method by which the intake of niton could be very much increased by giving electric baths with a continuous current; he says:

> If the patient in the electric bath were connected with the negative pole of a battery giving, say, 100 volts potential, or even more, and the other electrode were placed in the water, of course not in contact with the bather, the niton would rapidly reach the skin. It is, indeed, not unlikely that it would enter the system by so-called "ionization," and in this way a considerable dose might be given.

In the estimation of the value of natural waters it is

* Introduction to a discussion at the Royal Society of Medicine.

necessary to estimate the degree of its radio-activity, the contained volume of gas, and the amount of helium. Although helium is therapeutically useless, nevertheless its presence is an indication that we are dealing with a radio-active water. At the King's Well at Bath Lord Rayleigh found that there were 12 volumes of helium in 10,000 of the water, and some of the foreign mineral waters have been examined by Ramsay and others.

No introduction to a discussion on the subject we are joining in to-night would be complete without some reference to the valuable work of Professor His. He administers niton by means of a portable apparatus, and supplements its effects in certain cases of rheumatism by an injection of an insoluble, or repeated injections of a soluble, salt of radium, in the immediate neighbourhood of the affected joints. His's article on the treatment of gout and rheumatism, in the BRITISH MEDICAL JOURNAL,[2] unfortunately lacks full details of the exact method of the administration of niton. He tells us that under its influence the blood loses its uric acid within a few weeks, but the way, the time, and the dose are somewhat vague. What we require as practical balneologists is to learn how we can best utilize the niton for the benefit of our patients. It seems probable that radium emanations have a specific action on gout, and it is in cases of this disease that we may expect some of our greatest successes.

In an article by W. H. B. Aikins and F. C. Harrison, published in the *Canadian Practitioner and Review* last August, on the present status of radium therapy, the results in general are summarized as follows:

1. Greatly increased diuresis and excretion of uric acid.
2. Largely increased carbonic acid exhalation from 20 to 60 per cent.
3. Lowered blood pressure, especially in arterio-sclerosis.
4. Decreased blood viscosity.
5. Great improvement of gastric and duodenal digestion.
6. Marked solvent action on gouty deposits.
7. The dislocation of uric acid and its salts into carbon dioxide and ammonia.
8. Inhibition of inflammation and relief of pains in rheumatism.
9. Increase of sexual vitality.
10. Considerable influence over sympathetic nerve affections.
11. Marked results in diabetes, albuminuria, and glycosuria.

All of these results I am able to confirm from personal observation in Bath, and I would add the rapid disappearance of indican from the urine.

A good deal of further work on the subject comes from Germany. It seems that the Kreuznach waters are highly radio-active, and the local physicians have been studying the results of their application in various conditions. Substantially their conclusions coincide with those just quoted, but some further information in the matter of contraindications and best form of administering the emanations is now available.

So far as contraindications are concerned, they do not at present appear to be very definite; but there are observations enough to warn us that they certainly exist, and that, to say the least, some cases demand very great caution in the application of the remedy. Thus, Meternitzky of Kreuznach says he has found the application of radium emanation to cause not only subjective symptoms such as dizziness, fullness of the head, faintness, pains in the joints, but also objective phenomena such as emaciation, albuminuria, and even haematuria. This, as coming from a physician practising at Kreuznach, would be a very valuable testimony even if it stood alone. But it does not. Several others have studied the question, notably Davidsohn; working with an artificial radium producer, and not with mineral waters, he found that rheumatic and gouty patients after radium treatment experience violent pains in the joints and aggravation of other symptoms. This is particularly interesting to balneologists as affording an explanation of what we are all so familiar with—namely, an acute exacerbation of gout soon after treatment has commenced. Other observers have described considerable rises of temperature, haemorrhages from the mucous surfaces, and the like. It would be interesting to me personally to find any confirmation from other radio-active spas of the experience of everyone who has ever practised at Bath, to the effect that both baths and waters are definitely contraindicated in a case in which there is any suspicion of tuberculosis. Löwenthal considers that chronic nephritis, particularly of the contracting kind, affords a definite contraindication for treatment. It is probable that at least some of the accidents and inconveniences which have been described as resulting from treatment by radium have been due to the ignorance under which we still labour on the subject of doses. I may say here that a serious disadvantage to radium research and the application of radium is the absence of a general uniform standard of measurement. Neither the counting by Volt unit nor that by Maché unit is uniform in itself, as these units differ according to the different apparatus used. At the suggestion of Löwenthal, the Radiological Congress at Brussels last year appointed a committee, which accepted as unit the action of one gram of radium. It is hoped that this proposed Curie unit will bring order into the present confusion.

Concerning the method of administering radium, the German authorities do not agree with the views of those who attach subsidiary importance to the balnear treatment. Thus Kemen says:

> In the bathing method a certain part of the emanation passes through the skin into the blood, as was conclusively proved by Engelmann. It is also well known that during the bath the emanations readily find their way into the pulmonic circulation. Yet the bath appears to have a third mode of action in addition to these two; for, on the one hand, the fact of a very marked improvement, subjective and objective, is well known, yet, on the other, the quantities of radium available by the pulmonary and cutaneous routes are much too small to account for the results.

What this third mode of action may be it is impossible to say at present, but we should do well to bear this view in mind lest in our enthusiasm for drinking and inhalation, whose action we happen now to understand, we be led into neglect of the time-honoured method of bathing, the detail of whose action is still insusceptible of explanation. We should not reject it merely because we are unable to understand it.

For we must remember that there is still a great deal about radio-activity and its therapeutic action which we are unable to explain. We cannot explain, for example, by what processes it produces its therapeutic effect. If we may rely upon the work of German authorities, its action is in no sense bactericidal. We know, further, that it stimulates metabolism, but by what process it achieves this is not clear. It may be, it is indeed probable, that the suggestion of Dr. Leonard Williams may yet prove to be correct, and that the stimulation is effected by way of the internal secretory glands. The statement that radio-activity is not bactericidal is not universally accepted. Later investigations by Lazarus Barlow seem to show definitely that it is decidedly bactericidal. But whether this action is sufficiently intense in mineral waters, or even in the gas from such waters, to be of service has as yet not been proved. After all, this would seem to be a minor point, for as far as present knowledge goes it is improbable that bactericidal qualities, as we understand them, are the explanation of the benefit that is derived from mineral water treatment in such diseases as gout and fibrositis.

From my own personal experience I have little to add that is of value. It seems that we balneologists are like the man in Molière's play, who was delighted to find that he had been talking prose all his life. We in Bath and elsewhere have been using radium all our medical lives, and we are proportionately uplifted. But we cannot say which of our results have been due to the radio-activity of the waters, and which may be accounted for by the douching, massage, and other measures upon which we have so long relied.

Nevertheless, I should like to confirm, from my own observation, some of the clinical results that have been reported by certain observers. The experiments by Wickham and others show that radium is destructive to the gonococcus, whilst the literature of gonorrhoeal arthritis shows that the cure of this disease is usually tedious and tiresome by medical means. Nevertheless, some of our greatest successes in Bath have been with patients suffering from it. I have always, in addition to the mineral water, given them potassium iodide, and it is a significant fact that the salts of potassium are radio-active, giving off beta rays—that is, the valuable ones in the medical uses of radium. It may be that the action of potassium in gout and fibrositis is due to radio-activity, and that metabolism under its influence is stimulated.

In connexion with gonorrhoeal arthritis it is interesting

to note how remarkably well cases of iritis do under mineral water treatment. We have patients sent to us with recurrent iritis, who rapidly improve, and, what is still more important, do not usually relapse. Mr. Beaumont, who has seen a considerable number of these cases, doubts the very existence of rheumatic iritis at all, and believes the cases we see in Bath are almost entirely gonorrhoeal, and that those which are not are due to some other form of toxaemia. Experiments by Wickham and Degrais show that radium is not, strictly speaking, bactericidal, but that it so modifies the culture medium as to make it inimical to the growth of the gonococcus. They are of opinion that one millionth part of pure radium in water will act on the cultures. If these views are corroborated, it is probable that in the near future the whole treatment of gonorrhoea and its sequelae will be revolutionized. Gonorrhoeal ophthalmia at once strikes one as a disease in which some confirmation of these hopes should be sought for.

During the last few weeks I have been treating an old lady of 75, suffering from a long-standing atrophic scirrhus of the left breast, by exposing it to the gas from the Bath springs. The ulcerated surfaces were exposed for ten minutes daily, and after twelve applications all the ulcers had healed and some of the surrounding induration had disappeared. This is the first case, I believe, of malignant disease in which the gas has been used in this way. A single case is, of course, of no very great value; nevertheless it encourages us to repeat the experiment, let us hope with equal success.

One final word more with regard to radium. Many of us believe that in this element we have found the explanation of the therapeutical effects of mineral water, but beyond a declaration of our faith we dare not at present go. It is a postulation that would explain the accumulated evidences of the ages. Every biochemical fact concerning it dovetails with the clinical effects of its application. Is it, then, any wonder that we balneologists regard radio-activity as the unknown god, and the blind worship of ages and the empirical faith of centuries as justified? To us the unknown god and his shrine are alike worthy of our homage.

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THE EFFECT OF UNSUITABLE NECK CLOTHING ON HEALTH.

BY WALTER G. WALFORD, M.D.,
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I WISH to bring before the profession the important bearing of collars and other forms of neck wear upon health, and to show, by experience gained in three years' study of this subject, that it has not received the attention it deserves.

Any pressure on the neck acts most insidiously; the neck is cone-shaped, and a collar or band that may be perfectly loose at the middle of the neck, say over the cricoid, may be tight enough to exert some pressure when it drops into its working position, more especially in a slope-shouldered person. Again, a collar may seem roomy, but may, when a person is reading, get pressed by the chin on to important organs. Next, the habitual wearing of neck clothing not sufficiently large arrests the full development of the neck, with its numerous organs for communication between brain and body. This is of great importance during the period of growth. Also, in advancing life when the neck muscles are wasting and losing their tone, the vessels and nerves beneath become more exposed and sensitive to pressure.

I had often, when young, suffered from headaches, but my attention was not drawn to this subject till at the age of 69, when, after having had many years of gouty and rheumatic troubles, I got a clot in a small cerebral artery, attended with pain in the head, unsteady gait, vertigo, sickness, and double vision. Though I improved in some ways, yet at the end of four months the pain was increasing, and I was certainly going downhill. After some experiments, I decided to have all my neckwear made an inch larger. This sudden change rather affected me just at first; however, I improved so rapidly that in a fortnight I could cycle. My blood pressure, which in consequence of hypertrophied heart had previously been very high, rapidly fell. But I found, in order to retain the splendid health to which I was restored, that it was necessary, as my neck, now that it was free, was enlarging, to continue to enlarge my neck wear. I had to continue doing this for three years, at the end of which time (the present date) my neck was actually 3 in. greater in girth. Almost from the first I lost all my gout, rheumatism, headaches, and indigestion as well. Strange to say, during this period, probably through freedom of the thyroid, I got thinner, and lost nearly a stone in weight.

Thus my neck had not previously been allowed to attain its proper size; and it is reasonable to think that this increase of neck material, while I was getting thinner as well as healthier, could not be mere fat or muscle. I then proceeded to try the same remedy upon others, and, being almoner of a charity in East London, I had a good field for it amongst the poor. I found, in all ranks of life, that most people were in the same condition as I had been, and that few had quite the full means of communication between brain and body that Nature would have supplied. For in all experiments the neck enlarged. It would appear that my own symptoms had been mainly caused by pressure on the jugulars, producing congestion of brain, and that this impediment to the blood current had in turn affected my heart.

One of the first cases in which I tried the loose collar was that of a clergyman who suffered much from attacks of aphasia. He would sometimes, too, get dazed, and almost "lose himself." He at once took my hints, and from that time, two years ago, to this has had no return.

A man of about 55 had frequent attacks of aphasia with vertigo. He wore no collar, but had a tight muffler. I got him to loosen this, and in a few minutes he was all right. I soon satisfied him as to the cause of his symptoms, of which at first he seemed doubtful, by getting him to again tighten his muffler, when he reproduced them. I subsequently found I could always produce aphasia in him for experiment by doing this.

I have met with many other cases of vertigo, generally with sickness, but all yielded immediately to the same remedy. Some had previously been under the usual treatment, but without success.

Dr. Phillips, of Coventry, told me he had noticed that neck pressure over the pneumogastrics was often the cause of indigestion, and I have found very slight pressure will do this. Just as a person sitting cross-legged may suddenly find his foot numb, so it would seem that one may insensibly get the whole of the viscera supplied by these nerves numbed and handicapped in their work.

In July, 1911, a lady asked me to see her parlourmaid, who had been ailing for some days with sickness, discomfort in the stomach, and pain in the back and legs. I said the cause was tight neck wear. Whereupon the mistress and a lady friend attacked me vigorously for the absurdity of my views. Both said any one could *see* the young woman's things were *not* tight, and that she wanted "a proper course of medicine," etc. I told her that medicine would be useless, and then asked the young woman if she would prefer "the proper course of medicine," or to get well at once straight away. She chose the latter, and retired to alter her things amid murmurs from the two ladies. The same afternoon the maid, feeling better, went to Hendon to see the flying, walked miles, returned quite well, and continued so in spite of the intense heat prevailing at the time.

Is not the undersized neck particularly noticeable in phthisis? In every case that I have met with of late this has clearly been produced by tight neck wear in fast growing young people.

In July, 1910, I found two consumptive children, a girl and boy, aged about 13. The latter had just been refused admission on account of tubercle to the Shaftesbury Home. Both had tight neck wear. The parents in each case readily took my hints. Nothing else was done for these children but to give them a fortnight in the country. Both most rapidly improved and very soon recovered, even after their return to the balmy air of Shoreditch, and were still quite well a year later.

A lady who a year ago had been sent to recruit in Devonshire for incipient phthisis was most tightly constricted in the neck and short of breath. She gladly took my advice and at once expressed relief, and I learn that she has recovered.

I found a girl of 19, nearly 5 ft. 10 in. in height, in advanced phthisis, with a neck only 9½ in. in girth at the cricoid. What room was there here for sufficient windpipe and nerve communication for a girl of this size? Her neck enlarged 1¼ in. in three months, but the disease was too advanced for her to have a chance. Though she improved much the next fog killed her.

At an hotel near Torquay I was asked to see a slope-shouldered, ill-developed boy of 8, whose parents were very anxious about him as he had a weak chest. At first sight it almost looked as if his neck wear was sufficiently roomy, for directly you introduced your fingers it slipped up over them to where the neck was smaller, but on holding it in its working position I found it tight. On undressing the child he at once gave a full respiration of relief. I then showed the mother that the weight of the clothing had made a furrow round the root of the neck. This was at once attended to, and subsequently the parents told me they could almost see the child improve and develop from day to day, and six months later that he was perfectly well.

A Bluecoat boy of 14, but very small for his age, was sent during the holidays to run wild on the Norfolk coast, but while under these ideal conditions was found to have a weak chest, in which state he returned to town. He was ordered respiratory exercises for his ill-developed chest. On his father's side an aunt and other relations had died of phthisis, and on his mother's side he had lost an uncle of the same disease. I found his neck wear so tight that I could barely squeeze my little finger between the soft neck and the rigid clothing. Ten days later he was a different child. He then showed me that a finger wound which *for nine months had refused to heal* was well, his chest was well, and he has since done well in every way at school.

The lymphatics are easily obstructed by neck pressure.

A surgeon in North Wales, seeing that I had written a pamphlet on this subject, wrote to tell me he had had a hard tumour beside his trachea, which was regarded as an obstacle to life assurance. He slackened his neck things; the tumour was absorbed in four months. He then completed his insurance.

A man of 50, with malignant disease of the tongue, was suffering great pain. He had some enlarged glands behind and one in front of the left sterno-mastoid. He wore no collar, but had a flannel shirt, which appeared to compress him just above the inner end of the clavicles. I suggested he should loosen this, and before I left the house he expressed relief. In a fortnight the enlarged glands behind the muscle had entirely disappeared, the other was smaller, and all pain was pretty well gone; and though this did not seem to arrest the disease, he always said up to the last that I had given him great comfort.

A fat, clumsy girl of 15, who had had many fits, was stupid, troublesome, and gave great anxiety to her friends, had tight neck wear. This was subsequently kept loose, and four months later her mother told me she had very greatly improved.

Strange as it may seem, I have found the same treatment as beneficial in the gout and rheumatism of others as in my own case.

In January, 1911, I took in hand a retired army officer of 70, who had been a great sufferer from gout, rheumatism, lumbago, and sciatica. Six months later he said that from that time he had lost all his troubles, and had had better health than ever.

A working man, aged 73, who had for eighteen months been set fast from rheumatism in knees and hips and could only move by means of his arms, was induced by me to wear his neck things thoroughly loose. He lost most of his pain in a fortnight, and in nine months could walk about the room with a stick, and with this and a helping hand had even crossed a little street.

I have found the same thing invaluable in cardiac cases, apparently because the cause of the obstruction to the blood current has been removed. For example:

A lady fifteen months ago was approaching a critical condition from dilated weak heart of some years' standing. She had blue lips, dilated capillaries of face, shortness of breath, and great dyspepsia. I persuaded her to have her neck things thoroughly loose, and she is now in every way in enjoyment of the best of health. She is very active, and has quite lost her dyspepsia.

But these are only a few of the great variety of cases that I have dealt with successfully, and amongst them were several cases of migraine.

I find it important to protect the neck from pressure just above the inner third of the collar bone, and have had collars specially made for this purpose. In some cases it is as well not to relax the neck clothing too rapidly. As I have said above, I personally somewhat suffered at first from this. The too sudden removal of the support that appears to cause the high blood pressure is apt to produce faintness. For example:

A nurse noticed that a young child in her charge who had not been very well, went off into a stupor when undressed for bed. Thinking it a fit, she put the child into a hot bath. The child not coming round quickly, a doctor who was sent for said it was not an ordinary fit, and confessed himself puzzled. Exactly the same thing happened next day. A friend of mine who happened to be a relative of the family, and who had perused my pamphlet, suggested that the child having been too tightly neck-bound during the day, when the blood pressure became raised, had fainted by reaction on its removal. The child, subsequently more sensibly dressed, at once recovered, and had no more stupors.

Some of my friends have suggested that mischief may occur through pressure on the vasomotor or sympathetic nerves. Two of my friends who have had extensive medical experience among Eastern people tell me they have remarked that gout and consumption are almost unknown among those who have no neck covering at all. I have found that people of both sexes whom I have advised to have their things perfectly loose have given the best results. I see that many foreign surgeons and physicians are finding this out. Stimulants and hot weather dilate the capillaries of the head and neck, so that the neck wear may under these circumstances exert a pressure that it would not otherwise do. I am also convinced that too close wrapping up of the neck against cold is wrong. Quite as much warmth is got from a loose muffler as from a tight one.

What I am suggesting is always recommended to be used in first aid in any emergency, and is therefore surely useful to prevent an emergency. One must expect an occasional failure, but I only know of three.

One was an epileptic girl of 15. Though from the moment the loose neck plan was tried she ceased to have fits for six months and seemed wonderfully well, yet I heard that they returned later, after she and her friends had left my neighbourhood.

Two were men with rheumatic arthritis. Both improved much for a time, but as they were convinced they would "take cold" they soon returned to their old way. But as a fact these people seem less liable to take cold than others.

Though I have met with many exceptions, ladies are as a rule difficult to deal with, unless they are suffering severely, and even then it seems that some would rather suffer anything than not look smart. However, when they do for any reason adopt my plans I have found their personal appearance is immensely improved, as good health means good looks. Besides, I have found that when they have allowed Nature to have her way and take what neck-room she wants, they not only get good looks but may even regain their smartness.

TINCTURE OF DIGITALIS: ITS POTENCY AND KEEPING PROPERTIES.*

BY

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In spite of numerous papers pointing out the great variability in the potency of different samples of tincture of digitalis, it is yet often prescribed without any safeguard but the limit of the pharmacopoeial dose. This is hardly a safe proceeding. Not only is the initial variability in potency very great, but the drug deteriorates on keeping. Consistent results can, therefore, be obtained only from samples of the drug which have been standardized at a recent date. Up to the present none of the alleged active principles of digitalis appear to have found much favour. Dixon[1] concludes a comprehensive review of the subject as follows: "Pharmacological and clinical investigations have not made a clear case for the substitution of 'active principles' for galenical preparations of digitalis in the treatment of patients. Those active principles are for the most part just as irritant as the infusion or tincture. They are neither more reliable and constant in action than a properly standardized tincture, nor are they absorbed more rapidly. They have the same tendency to accumulate and are much more expensive. The one advantage that certain of them possess over the pharmacopoeial preparations is that they may be given intravenously without ill effect."

Fortunately, the demand for standardized digitalis is now sufficient to have created a supply, and several firms of manufacturing chemists submit samples of their products to pharmacological tests before placing them on the market. I have been engaged in the physiological testing of galenicals for several years, and have accumulated a number of data regarding the potency of the tincture of digitalis.

* The expenses of the research on the keeping properties were defrayed by a grant from the Carnegie Trust.

Initial Potency.

During the three years ending December, 1911, I examined 23 samples of tincture of digitalis, freshly made by chemists of repute. The standard employed was that 3 minims of the tincture should kill a frog weighing 20 grams within four hours.

Only male frogs were used, as the weight of ova may vitiate results. Of the 23 samples 12 were of average potency, 6 were under the average and 5 were over the average strength. The actual strength of each may be indicated by stating the dose equivalent to the maximum pharmacopoeial dose of 15 minims.

Average potency...	12	
Under average ...	6–25 : 22½ : 22¼ : 22½ : 20 : 18	minims.
Over average ...	5–10 : 9 : 8 : 7½ : 4	minims.
Total ...	23	

Since these varying results are obtained by manufacturers who are anxious to produce drugs of standard potency it would be of interest to know what kind of tincture is made by firms who aim at nothing more than keeping within the letter of the law as laid down in the *Pharmacopoeia*. It is to be noted that, in the case of tincture freshly made by firms of repute, the greater danger is likely to arise from the drug being too strong.

Keeping Properties.

Many estimates of the keeping properties of digitalis have been made. In most of these the initial criterion of potency has been care in manufacture or the reputation of the manufacturer. As already pointed out, this may not be a satisfactory test, and the value of the present results lies in the fact that the samples were all tested when fresh. Moran[2] found that a tincture made by a reliable firm of chemists from carefully dried leaves of good quality should retain its activity for two or three years. Haynes found that tincture of digitalis would keep for two years without material change in activity. His samples were kept in the dark. Other observers have found deterioration in two years' time, others in one year, and yet others in nine months.

The conditions under which my specimens have been kept were by no means specially favourable. They were not protected from light, and while the room in which they were stored was heated during the daytime for part of the year, they were subject to the variations of temperature of the Edinburgh climate during academic vacations.

The results may be summarized as follows:

1. Of three samples about a year old (14, 13, and 12 months) all were found to have retained their full activity.

2. Of four samples about 18 months old (20, 19, 18, and 18 months) one was found to have retained its activity, two were under strength to an extent not exceeding 33 per cent., and one was under strength to an extent exceeding 33 per cent. and not over 66 per cent.

3. Of three samples about 2 years old (22, 23, and 24 months) two were under strength to an extent not exceeding 33 per cent., and one was under strength to an extent exceeding 33 per cent. and not over 66 per cent.

4. One sample 2½ years old was found to have retained full activity.

5. Of three samples about 3 years old (37, 37, and 36 months) one was under strength to an extent not exceeding 33 per cent., one to an extent between 33 and 66 per cent., and one to an extent between 66 and 100 per cent.

In view of these results, which in a general way are concordant with those of others, it is hardly necessary to point out the necessity of prescribing only those tinctures of digitalis which have been standardized by physiological methods and are not over 12 months old.

Summary.

1. Nearly 50 per cent. of samples of digitalis made by manufacturing chemists of repute showed a departure from the average standard of potency.

2. The limits of this variation were from 275 per cent. over strength to 40 per cent. under strength. In other words, the effect of a dose of 10 minims might be that of 37½ minims or of 6 minims.

3. Tincture of digitalis probably retains its full activity for one year, but after that period deterioration of its potency to an important extent is likely to take place.

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LATERAL CURVATURE OF THE SPINE (SCOLIOSIS).

ANALYSIS OF TWO THOUSAND CONSECUTIVE CASES.

BY

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THE following analysis of 2,000 consecutive cases of lateral curvature of the spine (scoliosis) has been compiled from the notes of cases treated in private practice from July 1885, to June 1899, by the writer's father, Mr. Bernard Roth. The first series of 1,000 cases was published in the latter's book;[1] the second series of 1,000 was published by the writer in a paper read before the Annual Meeting of the British Medical Association at Birmingham in July 1911, which paper subsequently appeared in the BRITISH MEDICAL JOURNAL.[2] With the exception of reference made to them in a paper in the *London Hospital Gazette*,[3] the 2,000 cases are now published together for the first time.

1. SEX.—There were 1,721 females and 279 males—that is, females were affected six times more frequently than males.

2. AGE.—The age is taken from the time when the deformity was first noticed.

1 to 5 years old	84	cases.
6 to 10 years old	464	,,
11 to 15 years old	973	,,
16 to 20 years old	343	,,
21 to 30 years old	105	,,
31 to 40 years old	26	,,
41 or more years old	5	,,

Thus in 89 per cent. the deformity was first noticed between the ages of 6 and 20, and in 72 per cent. between the ages of 6 and 15.

3. HEREDITY.—573 cases, or 28.5 per cent., had blood relations also suffering from scoliosis. Particulars were obtained of 93 families in whom 3 or more members were affected; in 23 of these, 4 or more members were affected.

4. DEFORMITY (*Variety*).—Viewing the spine from behind, six varieties of deformity were met with:

Variety.—Description.	Name.	No. of Cases.	Percentage.
1. Whole spine convex to left	Ordinary C	1,085	54.0
2. (Upper (dorsal) curve to right; Lower (lumbar) curve to left) ...	Reversed S	618	31.0
3. (Upper (dorsal) curve to left; Lower (lumbar) curve to right) ...	Ordinary S	123	6.0
4. Whole spine convex to right	Reversed C	122	6.0
5. (Upper (dorsal) curve to left; Middle (dorsal) curve to right; Lower (lumbar) curve to left) ...	Ordinary ipsilon	48	2.4
6. (Upper (dorsal) curve to right; Middle (dorsal) curve to left; Lower (lumbar) curve to right) ...	Reversed ipsilon	4	0.2

In the "reversed S" and "ordinary S" varieties the upper curve with but few exceptions was confined to the dorsal region, and the lower curve to the lumbar region.

Similarly, in the "ordinary ipsilon" and "reversed ipsilon" varieties, the two upper curves with but few exceptions were confined to the dorsal region, and the lower curve to the lumbar region.

5. DEFORMITY (*Degree*).—The cases were also divided into two groups, the "*postural*" and the "*osseous*." The cases with "osseous" deformity were divided into four subgroups, according as the deformity was "a trace," "moderate," "severe," or "extreme."

Thus, in the first thousand:

TABLE I.

Variety.	*Postural* (that is, no Bony Deformity).	*Osseous* (that is, with Bony Deformity due to Vertebral Rotation).				Total (Postural and Osseous).
		Trace.	Moderate.	Severe.	Extreme	
1. Ordinary C	81	104	276	61	1	523
2. Reversed S	1	21	152	121	34	329
3. Ordinary S	2	7	23	10	3	45
4. Reversed C	13	8	32	16	3	72
5. Ordinary ipsilon	—	1	13	14	—	28
6. Reversed ipsilon	—	—	1	1	1	3
	97	141	497	223	42	1,000

In the second thousand:

TABLE II.

Variety.	*Postural* (that is, no Bony Deformity).	*Osseous* (that is, with Bony Deformity due to Vertebral Rotation).				Total (Postural and Osseous).
		Trace.	Moderate.	Severe.	Extreme	
1. Ordinary C	69	75	365	47	6	562
2. Reversed S	3	19	122	120	25	289
3. Ordinary S	—	7	44	20	7	78
4. Reversed C	10	5	25	9	1	50
5. Ordinary ipsilon	—	—	9	10	1	20
6. Reversed ipsilon	—	—	—	1	—	1
	82	106	565	207	40	1,000

Combining the results in Tables I and II, the following figures are obtained for the 2,000 cases:

TABLE III.

Variety.	*Postural* (that is, no Bony Deformity).	*Osseous* (that is, with Bony Deformity due to Vertebral Rotation).				Total (Postural and Osseous).
		Trace.	Moderate	Severe.	Extreme	
1. Ordinary C	150	179	641	108	7	1,085
2. Reversed S	4	40	274	241	59	618
3. Ordinary S	2	14	67	30	10	123
4. Reversed C	23	13	57	25	4	122
5. Ordinary ipsilon	—	1	22	24	1	48
6. Reversed ipsilon	—	—	1	2	1	4
	179	247	1,062	430	82	2,000

6. PAIN.—In 916 cases pain was present; slight in 282, moderate in 250, severe in 384.

7. FLAT-FOOT.—This was present in 1,225 cases. In 933 of these cases the arch was restored by standing on tiptoe. In 292 cases the arch was not so restored—that is, they were cases of severe flat-foot.

In the book and articles cited will be found a full explanation of the terms used in this analysis.

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LEFT-SIDED SUBPHRENIC ABSCESS DUE TO PERFORATED DUODENAL ULCER.

BY

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THE following is an account of a case of subphrenic abscess, consequent upon rupture of a duodenal ulcer, which in many respects shows a striking similarity to that narrated by Dr. H. D. Rolleston in the JOURNAL of February 24th.

In both instances the abscess was left-sided, in both it was duodenal in origin, and in each case free gas was found to the right of the falciform ligament of the liver and purulent fluid to its left. My patient, however, was a young woman, his a man somewhat advanced in years.

A female servant, aged 23, was admitted to St. Thomas's Hospital on January 26th, 1899, and, in the absence of Dr. Sharkey, came under my care.

The history obtained was meagre, on account of her serious condition. We ascertained that she had never suffered from haematemesis or melaena but was subject to constipation, the bowels acting very irregularly. Six weeks prior to her admission she was laid up for three or four days with what was supposed to be pleurisy. She made a partial recovery, and went to stay with some friends. Six days before admission she experienced severe pain in the abdomen and felt very ill. She was kept in bed for a week under medical advice, and at the end of that time was sent up to hospital as a case of "pneumonia with pleurisy." There had been no vomiting, the bowels had acted freely, and plenty of urine was passed.

When admitted, she was found to be of good physique, but extremely collapsed and slightly cyanosed. Her pulse-rate was 156, the respirations were 58, and the temperature 99.2°. Her complaint was of pain in the left side of the thorax and in the abdomen.

The belly was tender and distended; its movements were in abeyance. The liver dullness, internal to the nipple line, was replaced by resonance. The flanks showed slight signs of fluid. In the lower left axilla the percussion note was dull, and this dullness merged with dullness in the left flank. The breath sounds at the base of the left lung were suppressed and a few crepitations audible.

The condition of the patient was very bad. No prolonged examination was possible, and no exploratory operation could be undertaken. She died within twenty-four hours.

Necropsy.

At the necropsy a considerable amount of free gas was found in the peritoneal cavity. There was but slight generalized peritonitis, and the lesser sac had escaped infection.

Under the left wing of the diaphragm and around the spleen lay an old abscess cavity, the walls of which were lined by a thin grey exudate. The abscess extended along the upper surface of the liver as far as the falciform ligament, by which it was limited to the right. It was shut off from the lower abdomen by the mesocolic shelf and costo-colic fold. Thus on the right side of the falciform ligament was free gas, on the left side pus.

The duodenum was surrounded by adhesions. On its anterior wall, immediately beyond the pyloric ring, was a small perforation which lay in the base of an ulcer the size of a threepenny piece. The ulcer had shelving walls.

The lower lobe of the left lung was entirely collapsed, and it was easy to trace the extent to which the uplifted diaphragm had brought the walls of the pleural sinus together; the apposed portions of the pleura were anaemic and the parts above congested. The upper limit of contact was almost horizontal round the thorax, and its level corresponded accurately to the lower margin of the fifth rib in the axillary line.

When discussing his case Dr. Rolleston remarks on the rarity of left-sided subphrenic abscess as a sequel to duodenal perforation, and quotes some remarks from an address I gave on the watersheds of the peritoneum.[1] The case related above was one of a number I had before me when I prepared that address, and was the instance on which my remark as to leftward spread was based. It was the first in which I had found a left subphrenic abscess consequent on duodenal ulcer, and is the only one in which I have seen such a strictly localized left-sided collection result. I have, however, my *post-mortem* notes on another patient, a man aged 25, who was under the care of Dr. Sharkey, also in 1899, and in whom a ruptured duodenal ulcer caused an accumulation of sour and turbid fluid under the left wing of the diaphragm and also in the pelvis.

The factor which determines the gravitation of the infective fluid in such cases is the relation which the

duodenum bears to the mesial abdominal watershed formed by the forward projection of the vertebral bodies. Since the perforation, or, to speak more correctly, the rupture of an adhesion, usually occurs to the right of this watershed, the extravasated fluid tends to gravitate towards the right renal well (subhepatic fossa) or to invade the right subphrenic space. In those exceptional cases where the duodenum occupies a mesial position, or even lies a little to the left of the mid-line, the fluid tends to gravitate to the left, into the stomach chamber, and gives rise to an abscess under the left wing of the diaphragm.

Dr. Rolleston conjectures that adhesions may be responsible for the unusual site of the abscess in such cases, and this may well be so, but only, I submit, in so far as they may fix the duodenum in an abnormally leftward position. In other words, it is the slope at the side of the spine, and not the guiding constraint of the adhesions, which directs the infection to right or left as the case may be. In the first case recorded above the duodenal matting was rather extensive, but in the second case mentioned (Dr. Sharkey's) no adhesions were found. In this second case, too, I have a note of the position of the duodenal perforation; it lay nearly in the mid-line and was quite uncovered by the liver.

In the second case, as in the first, the contrast between the anaemic and injected portions of the pleura was evident, the line between the two being at the upper level of the sixth rib in the mid-axilla, so that in both patients the collection could have been evacuated by the lateral transpleural route on resection of portions of the sixth, or, better, seventh rib.

In justice to Dr. Jenkins and my colleague, Mr. Maynard Smith, I must repeat that the description of the most posterior part of the left subphrenic space, quoted by Dr. Rolleston from my address, is theirs and not mine.

REFERENCE.
Lancet, March 26th, 1910.

OPERATION FOR DECOMPRESSION: RECOVERY.

BY
R. W. MULLOCK, M.D.DUB.,
HONORARY MEDICAL OFFICER, SOUTHWOLD COTTAGE HOSPITAL.

THE patient in the following case, a gardener aged 25, was admitted to the Cottage Hospital, Southwold, on June 25th, 1907. His family history was good and his own health had been excellent until April, when headache and dizziness had commenced; he had gradually grown worse.

When admitted his headache was constant, and vomiting, without retching, occurred at intervals. He walked somewhat unsteadily, with feet well apart, and complained of dizziness. His eyesight was unaffected and the pupil reflexes normal. Pulse 46; temperature subnormal. A diagnosis of cerebral tumour was made, and he was treated with mercury and potassium iodide. He gradually became worse. At the end of July his position was as follows:

> The headache was extreme, requiring ½ grain of morphine hypodermically, nightly. Optic neuritis was present in both eyes; he was unable to read, and even pictures looked blurred and indistinct. There was no strabismus, but nystagmus was present on lateral movements of the eyes, in particular when made towards the right. No diplopia. Co-ordination of the right arm was bad; left arm normal; right arm and leg were weaker than left. He was unable to get on his feet, but when assisted to rise his gait was very uncertain and stumbling, with tendency to fall to right side at every few steps. With feet together and eyes shut he swayed to right.

Tumour of the right cerebellum was diagnosed, and on August 5th I removed a portion of bone 2½ in. long and 1½ in. wide over the right cerebellar region, and, as his condition was good, I incised and removed bulging dura mater. No tumour was evident, so I closed the wound without replacing the bone. He stood the operation well and the headache at once disappeared, but there was still slight sickness, considerable inco-ordination of the right arm, and marked diplopia.

On October 4th he could walk without a stick and was much improved, and was discharged.

In August, 1908, he returned to work and obtained a post as head gardener at an hotel in Southwold, which he still holds.

At present (October, 1911) his condition is most satisfactory. His gait, sight, and co-ordination are normal. He has had no headache since the operation nor any bulging at the site of the latter. Nystagmus is still present to a very slight degree when the eyes are moved to the right, and he complains of slight dizziness when his head is dropped backwards (in a barber's chair), but he can work as hard as ever and gives complete satisfaction to his employers.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A RAPID METHOD OF DIAGNOSIS IN MALARIA.*

IT has often been said to me that it is impossible to examine every case of malaria in out-patient practice, owing to the length of time required; but I feel that in order to become thoroughly acquainted with the diseases of any locality this is necessary. The following is a method which I have found useful in practice:

Thick films are made on the slide without even a coverslip, so thick that the blood when allowed to run to one side is seen of a bright red colour. This is rapidly dried and examined directly under a drop of cedar oil and a $\frac{1}{12}$ in. immersion. The drying of this film causes the only delay. In a dry country such as Persia films will dry in the open air without any special treatment in about half a minute. In a damper climate they should be exposed to the sun turned upside down. In damp and cold weather they should be dried gently over a spirit flame. In any case one can begin the examination before the *whole* film is dry, and very often the information got is sufficient before the thicker edge is properly "set."

I have often proved the existence of malaria, verified, of course, by a properly stained slide, in one minute by the watch from the time of drawing blood. The thicker part of the film is best examined first, and from the character of the pigment the species of malarial parasite can, after a very little practice, be diagnosed in most cases with great ease, almost as easily as in a wet film. The diffuse and fine dots of tertian, the compact and coarser dots of quartan, and the peculiar arrangement of the pigment in the crescents in tropical malaria are very characteristic, not to mention pigmented leucocytes. They are as well seen as in a wet film, the chief point being to be sure that the pigment is on the same level as the red corpuscles, and disappears totally on focussing up or down. If no characteristic pigment is found in two minutes, the case is most likely not one of malaria; in any case of doubt, of course, the other methods are available, but probably not more than one case in ten of untreated malaria would escape detection.

I do not pretend for a moment that this is a method by which beginners can study malaria, any more than that of Sir Ronald Ross; but it is very rapid and accurate, and one, moreover, which avoids nearly all the pitfalls inseparable from those more commonly used, and, indeed, from Sir Ronald Ross's method, which I have tried. At starting, of course, a student should compare his dry slides with slides carefully stained in the usual way. This gives confidence and is a valuable check to the work.

I have no hesitation in saying that once this method is given a fair trial, it will be found of real use in out-patient work in tropical countries, where stress of work makes every minute of the greatest value.

Chepstow. J. CROFPER, M.D.

A CASE OF HYPOGLOSSAL NUCLEI PARALYSIS.

It has been disputed by some authorities, notably Oppenheim, whether the hypoglossal nucleus gives fibres to the seventh nucleus which supplies the orbicularis oris. Oppenheim takes up a sceptical attitude and thinks that such an innervation constitutes an individual abnormality. The contrary view is held by Howard Tooth and Purves Stewart. Bruggia-Mattenci described a positive case in 1887.

In view of the rarity of such a paralysis the following

* Read at the meeting of the Society of Tropical Medicine and Hygiene, March 19th.

case, shown at the Transvaal Medical Society on December 21st, 1911, may be of interest:

A man, aged 30, with a specific history came to the hospital in November. A few days previously he felt his speech somewhat affected. Swallowing and chewing became embarrassed. In twelve hours these functions were almost entirely lost. There was also some weakness in the legs and an inability to move about. There was never any loss of consciousness and the case was obviously one of thrombosis.

A month later I saw him and found his condition as follows: There was difficulty in eating and speaking. He could not whistle, and constantly drooled from the mouth. The tongue lay flaccid on the floor of the mouth. The whole organ was atrophied, wrinkled longitudinally, showed fibrillar tremors, and could not be protruded. The faradic responses were much diminished, not only in the muscles themselves, but when the current was applied to the nerve above and behind the cornu of the hyoid bone. The fibrillary movements of the tongue made it difficult to measure exactly the qualitative alterations under galvanism of any given muscle. There was definitely a quantitative diminution of response throughout the whole organ. The point of chief interest was that the orbicularis oris clearly participated in the electrical alterations. There was no affection of the other facial muscles. The ocular muscles were all intact, as were all the remaining cranial nerves. There was no affection of the muscles supplied by the descendens hypoglossi. There was some implication of the pyramidal tracts. His gait was spastic, his knee-jerks much increased, and some ankle clonus could be elicited.

On iodides first, and later on iodides with mercury, marked improvement resulted in two months. He now speaks and eats without much difficulty. His tongue is clean and can be protruded beyond the teeth. Drooling has ceased. Although the knee-jerks are still somewhat exaggerated, the ankle clonus has disappeared, and he walks about comfortably with the aid of a stick. It would be justifiable to predict a greater measure of recovery with the process of time.

A. M. MOLL, M.B., Ch.B.Edin.,
Senior Physician, Johannesburg Hospital.

SYPHILITIC REINFECTION.

SECOND attacks of syphilis are fairly common, but until modern methods of diagnosis were employed there were always doubts about the diagnosis. At the present time there appears to be an inclination to attribute the liability to these second attacks to the completeness of the cure, especially when salvarsan has been used. It is for this reason that this case may be of interest.

T. W., aged 28, contracted syphilis in 1909, and for two years seems to have had a thorough course of treatment by injection of mercurial cream. He then asked me whether it was possible to say if he was free from syphilis; to determine this, centrifugalized serum was sent to Haslar, and also his blood was taken and examined at Plymouth Hospital. In both cases a positive Wassermann reaction was returned.

A short time after this I sent for the man and recommended him to have a further course of treatment; he then called my attention to the old scar, and I noted: "Site of old scar has come into prominence" (five weeks previously he had had connexion). He was then placed on hyd. c. creta, gr. iii ter die, but six weeks later the sore had broken down, and appeared suspiciously like a primary sore.

Serum from the sore was collected and examined for spirochaetes by the Chinese ink method. *Spirochaeta pallida* was readily found after half a minute's search.

F. C. B. GITTINGS, M.D.Lond.,
Staff Surgeon, Royal Navy.

A SIMPLE AND IMPROVED POST-OPERATIVE DRESSING.

I READ with interest the articles on "Methods of Dressing Aseptic Wounds" which appeared in the JOURNAL of February 3rd, 1912. The following method, which has been adopted for some time in the Royal Infirmary, Preston, and proved satisfactory, is, I venture to suggest, more comfortable to the patient, and quite as efficient.

Previous to operation the skin is prepared by the iodine method, that is, the application of a 2 per cent. solution of iodine in rectified spirit. After the stitches have been tied the same iodine solution is again applied along the line of incision and adjacent skin. A protective covering of gauze two or three layers thick is fixed at its edges to the skin by collodion or strapping. The dressing is removed on the seventh to tenth day and the stitches taken out, and a third and last application of the iodine solution made, no further dressing being necessary. In many cases, to minimize the exudation of serum and arrest any small bleeding points that may have been overlooked, insertion of one or more deep mattress sutures is useful; these are removed on the second or third day, when a similar protecting dressing is reapplied.

The following appear to me to be the advantages possessed by this method:

(*a*) Simplicity of application.

(*b*) Increased comfort to the patient, as more bulky dressings necessarily cause discomfort and irritation.

(*c*) The production of a dry wound by free ventilation. The serum from the line of incision dries up, and makes a very efficient barrier against micro-organisms.

(*d*) Free exposure of the abdomen, rendering observation more easy.

(*e*) Success of its use as shown by our results being better than those yet obtained by older methods. An extensive trial in various cases has proved itself uniformly satisfactory.

The cutting of the stitches short so as to prevent them coming through the meshes of the gauze renders the dressing more comfortable.

L. T. POOLE, M.B., Ch.B.Edin.,
Resident Surgical Officer, Royal Infirmary, Preston, Lancs.

ETIOLOGY OF ERYTHEMA NODOSUM.

IT may be of interest to those concerned in the study of the pathology of erythema nodosum to record the following case which came under my care at the Queen's Hospital for Children, being one of three admitted within seven days of each other:

A girl aged 12 was admitted with a history of phthisis in both maternal grandparents and of having had an attack of chorea two and a half years previously and an attack of rheumatic fever about eight months afterwards. She was admitted, with a temperature of 102°, on account of morbus cordis and some signs of pleurisy, neither of which proved to be urgent. About twenty-four hours after admission the usual signs of erythema nodosum began to appear on the legs, the temperature being still raised. As I had never had the opportunity of diagnosing a case so early in its course, I thought a blood cultivation might prove interesting, and Dr. Woodforde, who was good enough to make one, reported the presence of a streptococcus which gave all the sugar reactions of *S. salivarius*.

Taking all these facts together, they would appear to militate against the views of those who hold that this disease is a separate infection from rheumatic fever, notwithstanding the tuberculous history.

Ingatestone. SHEFFIELD NEAVE, M.R.C.P.Lond.

CONTINUOUS INHALATION TREATMENT OF PULMONARY TUBERCULOSIS.

READING in the JOURNAL, of April 6th, p. 767, Dr. Lees's very interesting list of cases treated as above, brings to my mind what seemed a very good example of marked and rapid improvement in a patient who consulted me last November. Mr. R., aged about 50, consulted me for a cough which had been troubling him for some months. On examination I found signs typical of pulmonary tuberculosis, dull areas, and crepitant sounds in both lungs. I had his sputum examined at the Clinical Research Laboratory, and a report of "a moderate number of bacilli." He was placed at once on continuous inhalation. In a month's time the laboratory report of his sputum was "no bacilli, but some muco-pus." The cough also greatly improved, and to use his own expression, "he felt a different man to what he had felt for months." A month ago he told me he was feeling very well, and had but little cough. As an isolated case, perhaps this proves little, but in conjunction with Dr. Lees's remarkable list perhaps it is worth reporting.

New Wandsworth, S.W. J. ASHTON, M.B.Lond., M.R.C.S.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

MANCHESTER ROYAL INFIRMARY.

AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION.

(Reported by J. R. RIGG, M.B., Ch.B.)

I AM indebted to Professor William Thorburn for permission to publish the following notes. The case was one of intestinal obstruction, intermittent in character, due to the ball-valve action of a foreign body. The patient, a male aged 44, a labourer, was admitted on January 19th last as a case of recurrent appendicitis, and gave the following history:

Six years ago he had his first attack of severe abdominal pain, beginning on the left side and spreading over to the right. The attack lasted about an hour, and then vomiting came on, first of food swallowed at the last meal, then of "brownish, bitter-tasting matter," and the pain was relieved, the patient feeling quite well again next day. Since then he has had very many attacks, the longest free interval between any two being not more than three months. Up to December, 1911, however, the patient had not been confined to bed, but then he had an attack the symptoms of which were so severe that he was in bed for nine days. The pains lasted from ten minutes to three or four hours, and were always relieved by vomiting. He had suffered from constipation for many years and had not been losing weight.

On admission, the general condition was good, pulse 84, temperature normal, bowels slightly constipated. Examination of the abdomen showed neither distension nor peristalsis. Some fullness could be felt in the right iliac fossa, palpation eliciting tenderness; tenderness was also experienced on rectal examination.

Operation.

An exploratory operation was decided upon, and was performed by Mr. Thorburn on January 24th. The abdomen was opened by the usual gridiron incision for removal of the appendix. On incising the peritoneum a loop of small intestine presented, was drawn out through the wound, and at once seen to possess pathological features, a constriction being observed, with marked hypertrophy of the gut above and atrophy below. The constriction was very localized, and the peritoneal coat in the vicinity was studded with small white nodules resembling tubercles. The mesentery of the affected loop also showed pathological changes—namely, an old inflammatory cicatrix, and an enlarged and hard lymphatic gland. Palpation discovered a small hard body, which could be freely moved about inside the lumen of the hypertrophied gut above the stricture, beyond which it could not be passed. The bowel was replaced in the abdomen and the appendix sought for. It was found on examination to be quite normal, and evidently the symptoms could not have been due to any lesion of the appendix. Appendicectomy was performed, and attention again directed to the constriction first encountered. The affected loop of intestine was once more drawn out through the incision, and it was decided to excise this portion of gut. Intestinal clamps were applied, and about 6 in. of intestine, including the stricture, removed, along with a portion of the mesentery and the gland already mentioned. End-to-end anastomosis of the divided gut was then performed with the aid of a Robson's bobbin, and the intestine replaced in the abdomen, which was closed in layers.

When the portion of bowel removed was opened up the stricture was seen to be of old standing and inflammatory in nature. In the hypertrophied gut above, lying in a small crypt, evidently fashioned by it, was found a plum stone, the hard movable body previously referred to. The condition is well shown in the photograph. The valvulae conniventes were large and well marked, proving that the part of bowel removed had been situated high up in the small intestine.

A microscopic section was made of the whole thickness of the bowel at the site of stricture, and confirmed the diagnosis of inflammatory origin, the slide showing marked fibrous changes with anomalous giant cells.

Recovery was uneventful. The patient left the hospital twenty-one days after operation, quite well.

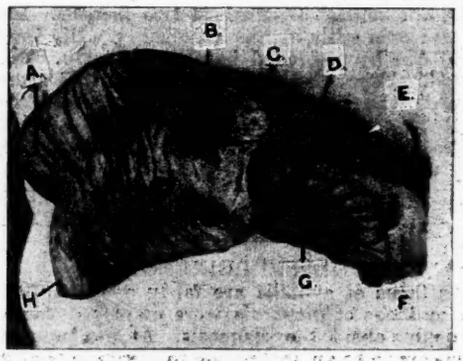
Remarks.

The case presents some points of interest:

1. The indefinite character of the symptoms diagnosed as appendicitis. The short, sharp nature of the attack, lasting only a few hours, relieved by vomiting, and occurring at very frequent intervals, was not of the ordinary appendicular type.

2. When the abdomen was opened, the affected coil at once presented. This admits of a two-fold explanation. In the first place, all collapsed small intestine below a point of obstruction high up tends to fall towards the right iliac region. This is mechanical, and due to the position of the sigmoid colon on the left side, and also to the arrangement of the great omentum. Then again the position of the pathological bowel immediately beneath the parietes is probably due to "vital" action. It appears to be Nature's way of dealing with the diseased gut, by bringing it to the ventral surface, into the situation most suitable for the formation of a faecal fistula, whereby intestinal obstruction may be relieved.

3. The fibrous stricture of the small intestine, which had evidently been present for many years, as shown by the signs of old inflammation on the peritoneal aspect of the bowel, and the hard semi-calcified gland, had caused no



A, Valvulae conniventes; B, plum stone; C, stricture; D, peritoneal coat (tubercles do not show); E, constricted portion of gut; F, atrophic gut below; G, peritoneal coat; H, hypertrophic gut above stricture.

symptoms at all until the advent of the plum stone, the gut above having hypertrophied sufficiently to drive the fluid contents of the intestine along. Then it would seem that, after impaction at the stricture for some time, the peristaltic movements of the bowel displaced the stone, and it fell away to one side, into the little fossa which it gradually made for itself, and the intestinal contents passed on again. All the subsequent attacks were apparently due to dislodging of the stone from this fossa up against the stricture. Unfortunately the patient had no recollection of swallowing the stone.

4. The original cause of the stricture is quite unknown, but it was probably due to trauma, using the word in its widest sense. The extremely localized nature of the obstruction made one think of internal hernia, occurring in infancy and reducing itself, the stricture afterwards developing at the point where the gut was nipped. At the same time, tuberculous disease must not be overlooked, although the giant cells were somewhat atypical, and the rest of the abdomen, as far as could be explored, showed no indication of tuberculous disease elsewhere.

5. The operation of end-to-end anastomosis was performed through the original appendicular incision with entirely satisfactory results. The position of the coil in the small intestine was not anatomically located, but, as mentioned before, the large valvulae conniventes supplied the clue.

THE late Sir William Allchin, M.D., left estate of the gross value of £8,405, with net personalty £8,104.

Reports of Societies.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Friday, April 12th, 1912.

Mr. McADAM ECCLES, President, in the Chair.

Discussion on Rheumatoid Arthritis.

THE PRESIDENT opened the discussion by giving what he had been accustomed to take as a working definition, but added that he expected to hear it roughly handled in the debate. He regarded rheumatoid arthritis as an arthritis affecting, as a rule, many joints, but chiefly the smaller ones, and occurring usually in the female sex, and always due to the absorption of a toxin. His feeling was that the cause should be sought for, and if that were found the treatment became clear. But the etiology of the disease was so varied that the treatments had been multitudinous. Multiple arthritis must be caused by an infection induced from a particular focus to the joints by the blood stream, and advance in dealing with the condition was almost entirely based upon the new science of bacteriology. It thus concerned every branch of the profession.

Dr. F. J. POYNTON read a paper, illustrated with photograph slides, on experimental work bearing on causation. In this he confined his attention to one point, the demonstration that one micrococcus—namely, that which he believed to be the cause of acute rheumatism—might experimentally produce in animals various types of arthritis. He demonstrated the occurrence of acute transient arthritis, osteo-arthritis, and periarticular arthritis. In all these examples he emphasized the fact that no suppuration had occurred. The different lesions depended on the severity and duration of the arthritis which resulted from intravenous inoculation. He believed that among the many causes of rheumatoid arthritis acute rheumatism must be included, and he desired to make it clear that to try to differentiate a case as one of rheumatoid arthritis upon the character of its lesions alone would be liable to lead to error. He regarded it as a distinct step forward to be able to reproduce such lesions as he showed occurred. They were the result not of the direct infection of a joint, which he thought to be of but little scientific value, but of intravenous inoculation. The histology of the capsule of the joints in these lesions was interesting because it showed a perivascular fibrosis in the chronic cases, which seemed to explain the tendency to atrophy of these structures, and the consequent stiffness of the articulations. He thought the problem of the etiology was distinctly nearer solution at the present time, and to him it was narrowing itself down to these points. If all the infections known to produce a severe non-suppurative arthritis were taken away, was there still left some specific but unknown infection? Could rheumatoid arthritis arise without some infecting agent? He had investigated for Mr. A. E. Barker, with Dr. Paine, a considerable number of rheumatoid joints, and was inclining to the belief that just as certain streptococci and organisms of the streptococcic group might produce these lesions, so also might some which belonged to the group of staphylococci. Unfortunately, as was the case in animals, cultures from these human joints, though the joints were grossly diseased, were repeatedly negative, and that fact made advance in this direction very slow. Dr. Poynton expressed his admiration of the investigations made by Mr. Goadby upon dental suppurations. It would have been gathered that he, the speaker, regarded rheumatoid arthritis as a result of many infections; and though he believed the constitution of the patient had a most important share in the history of the disease, he rather doubted the possibility of such lesions arising without the addition of some infecting agent.

Dr. LL. JONES LLEWELLYN referred to the charts of fields of vision shown by Mr. Harman, indicating a definite restriction in subjects of rheumatoid arthritis, and said that he saw the same association nine years ago, at Bath, in company with Mr. Beaumont of that city. There seemed to be here a confirmation of the occurrence of vasomotor phenomena identical with or similar to those found in Raynaud's disease. Vasomotor phenomena were present long before the obvious joint trouble. He had seen 6 cases of gastric ulcer in whom there was a local asphyxia or syncope of the fingers, and in whom there developed later periarticular swellings. If this precursor were more frequently recognized, much might be done to ward off rheumatoid arthritis.

The PRESIDENT, in this connexion, referred to a recent article in this JOURNAL dealing with the subject of "dead fingers," and said he had often heard patients complain, before getting the fusiform swellings, of deadness of fingers.

Mr. LLOYD WILLIAMS made a contribution on oral sepsis in the causation of rheumatoid arthritis. He said the conditions favouring infection were, first, stagnation of food around the necks of the teeth and on the gums, and tartar around the necks, which, with the fermenting food stuffs, caused an ulcerative gingivitis. Food débris was very full of mouth bacteria. This condition was frequently diagnosed as pyorrhœa alveolaris. Secondly, caries, even if only one tooth was involved, with exposure of nerve, was a serious cause, as it threw the nerve and the opposing tooth out of function. The third cause was chronic septic periostitis or pyorrhœa alveolaris, a condition not easily diagnosed. The main features to look for were exudation of pus on pressure of gums around the tooth after cleaning away any débris; secondly, testing for pockets between teeth and gums, for normally the gums were continuous with the periosteum and adherent to the neck of the tooth immediately below the line of the enamel. Where the disease was present, a probe passed some distance along the root of the tooth. The attachment of the tooth in the jaw was a joint known as gomphosis, and there seemed some reason for the view that the chronic septic periostitis was itself an arthritis. The membranes were first attacked in osteo-arthritis; there seemed to be no specific causal organism. Thickening in the alveolar bone had been observed, with distinct bossing and lipping. Removal of septic foci in the mouth alone brought about improvement, and cures of the condition had been more frequent since the advent of vaccines. A woman, aged 27, was in the ward, under Dr. Beddard, complaining of pains in the joints and all over her for a month; she was sent to the hospital under the idea that she was suffering from acute rheumatism. She looked ill, and her complexion was muddy-looking. The eyes were photophobic, and only reacted to light sluggishly. Her tongue was furred, and she had several stumps, and one carious tooth with a septic pulp. Her knees and wrists were slightly swollen, tender, and painful. The affected teeth were removed, and a culture taken. A vaccine of pneumococci and staphylococci was made, and 10 million injected. The temperature gradually fell thereafter, and soon she was discharged well. He showed that evening a man, aged 56, who had pains in the metacarpal joints and in the knee, and for six months they had been getting worse. There was no wasting of muscles, nor tenderness over the sciatic nerve. When first seen, the mouth was very dirty, and it was cleaned for a fortnight with 1 per cent. chromic acid. There was still a patch of thickened mucous membrane around the affected teeth. A vaccine was prepared from organisms in the deep discharge of the teeth, namely, a Gram-positive diplococcus, probably a pneumococcus, and a Gram-negative bacillus, probably *B. coli*. Twenty-five million were injected, and the patient now looked brighter, and said his hands were greatly improved. He was also now able to sleep much better.

Dr. MIDELTON contributed a short paper on his methods of treating rheumatoid arthritis by counter-irritation, especially the application of an ointment consisting of croton oil, cantharides, acetic acid, and almond oil, his aim in this being simply to produce a rash. Patients might complain, for a day or two after the application, of burning or irritation, but that was relieved by applying hot water, followed later by glycerine. He used drugs very little. He also used the galvano-cautery, which could be applied either to the spinal column or to the neighbourhood of joints. It was not his custom to anaesthetize the skin beforehand. The administration of thyroid and the use of baths and massage had also had a place in the treatments he practised. His difficulty had been to prevent patients from using the affected limbs too much when he had restored power to them; early movement he regarded as a mistake. Neither did he believe in the early breaking

down of adhesions in these cases; it was better to wait until the general health had been largely built up, and his treatment seemed to soften adhesions. He illustrated his paper by showing a number of lantern slides, and gave particulars of cases treated.

Dr. Horder sent a paper on the treatment of the condition by means of vaccines, which was read by Dr. Stansfield. In it was reviewed the present position of the matter and animadverted against the present nomenclature, preferring the term "multiple arthritis." Pigeonholing cases under a generic term he regarded as fatal to right treatment, because it limited one's conceptions. Inoculations should, in his view, form only part of the treatment. In many cases irretrievable damage had already been done to the joint before vaccines were applied. He regarded recent results of vaccine treatment in the condition as encouraging.

Dr. Preston King also alluded to the unsatisfactory nomenclature, and agreed that there were a number of causes at work producing the same apparent condition, the cause sometimes being the specific germ of rheumatism. Even before the discovery of that bacillus he advanced the view, in a thesis, that the disease was microbic. Bath and other mineral waters were not claimed as anything more than helpful adjuncts in treatment, and if those waters had been used oftener in conjunction with vaccines failure to cure would probably have been fewer. He agreed with Dr. Midelton as to the importance of rest to the joints, even if the state was only subacute. At the Mineral Wa er Hospital adhesions were not broken down; he considered that was a barbarous method. A case which had been shown that evening by Dr. Palmer was of special interest; neither Dr. Palmer nor he knew until that evening that the case was under his (the speaker's) care twelve years ago. There was an enlarged shoulder and swelling and deflection of fingers; but now there was no rheumatoid arthritis at all. Every effort should be made to find out a definite etiology. He had tried vaccines made from the teeth exudation, but had had very little encouragement. A lady bacteriologist some years ago worked out, at Cambridge, the fauna and flora of the vagina, but she arrived at no definite useful conclusion. He had seen cases caused by the gonococcus which resembled rheumatism in appearance.

Mr. Ernest Shaw said it was interesting to him to hear the various names which were bestowed on what some said was rheumatoid arthritis, and others said was osteo-arthritis. For years he had considered that in these joint troubles there was a micro-organism in the joints or around them, and that view was shared in by the President and Dr. Poynton. He narrated some cases in which vaccines made from the joint effusions resulted in benefit. When the mouth, nose, and throat were healthy, a swab from the cervix in a woman would be likely to afford a clue; or, failing that, the faeces should be investigated. *Staphylococcus albus* and a diphtheroid bacillus were frequent sequelae of gonococcal invasion.

Dr. Rice-Oxley related the case of a lady, aged 32, who complained of the series of symptoms which one recognized as those of oncoming rheumatoid arthritis; but guaiacum and sulphur produced no satisfactory results. Therefore he decided upon inoculations, especially as the nose and throat seemed injected and the tonsils enlarged. After two months' treatment the result was strikingly good; most of the pains had gone, and she seemed quite different. There were some cases in which there seemed no cause for the condition except the onset of the menopause; but some of them might be due to unsuspected gonococci having been absorbed from the vagina.

Dr. Dauber said it was now largely the custom to attribute to oral sepsis many of the ills to which humanity was liable, but it was well to remember how common oral sepsis was. During the last five years the condition of the mouth of every patient under his care at a women's hospital was examined, and not 1 per cent. of those women had what could be called a clean mouth. A better result was found on examining members of a yeomanry regiment, but even here there was a very large proportion of unclean mouths, yet the general health was very fair. But there had not been a case of rheumatoid arthritis in the regiment for years.

Exhibits.

Dr. Bernstein and Dr. Braxton Hicks: Series of museum specimens, not only of the disease in point, but of other joint affections, for purposes of contrast. There was a hypertrophic Charcot knee, a specimen of tuberculosis of the knee, the cirrhosed liver from a girl, aged 23, who for ten years had had chronic arthritis, without any history of alcohol, and specimens showing wasting and eburnation of the bones. Mr. Bishop Harman: A number of charts of the fields of vision of cases of rheumatoid arthritis, for several of which he expressed his indebtedness to Mr. Beaumont of Bath. In a series of 40 cases the average reduction of the visual fields was 20 per cent. Dr. W. J. Midelton: A number of photographs of cases of the condition at various stages. Dr. Reginald Morton: Skiagrams of joint conditions—osteo-arthritis, rheumatoid arthritis, and septic arthritis, with normal joints exposed by the same rays. The joints which were the subjects of rheumatoid arthritis showed absorption of interarticular cartilage, but with practically no osteophytic formation. On the other hand, an osteo-arthritic joint did not show so much interarticular absorption, but lipping of the bone was very distinct. A fine specimen of a Charcot joint which was dislocated showed large osteophytes attached to the bone, and others which were not obviously connected with bone. A shoulder-joint radiograph showed the humerus in an abnormally high position, owing to the absorption of the articular cartilage and subacromial bursa.

HUNTERIAN SOCIETY.

Wednesday, March 27th, 1912.

Dr. Hingston Fox, President, in the Chair.

The Therapeutic Value of Alcohol.

Sir Victor Horsley, in opening a discussion on the therapeutic value of alcohol, said that the enormous decrease during the last twenty five years in the amount of alcohol used at hospitals and other institutions was due partly to increased knowledge of its action and partly to the number of newly discovered drugs at disposal. Though the evidence as yet available in respect of its therapeutic value was conclusive in neither direction, most members of the profession held a pretty decided opinion on the drug one way or the other. Alcohol was now prescribed sometimes as a stimulant, whatever that might mean; sometimes, in an exactly contrary sense, as a narcotic; and, very rarely now, as a "tonic." The narcotic action was indubitable, but the so-called stimulation effect was really a phenomenon caused by the removal of the control of the highest nerve centres. The error of the belief in a tonic action was shown by comparing the appearance of dogs which had been total abstainers with that of others of the same breed which had been moderate drinkers over a period of three years. He could not speak of the treatment of pneumonia from personal experience, but he believed that whereas twenty-five years ago alcohol had been regarded as a sheet anchor, it was now discarded by most physicians in treating that disease. It had certainly been learnt that the patient's resistance to the pneumococcus was diminished by alcohol, and the Registrar-General had even gone so far as to ascribe the excessive death-rate from pneumonia in males to the fact that they consumed more alcohol on the average than females. He asked physicians present whether blood pressure and cardiographic records showed that alcohol could be called a cardiac stimulant in pneumonia, and what was its relation to the grave symptom of arrhythmia. The effect of alcohol in pyrexia was the sum of its effect on the infective process underlying the pyrexia, and its effect upon the increased katalytic metabolism that was going on. Even in very small quantities it diminished the amount of complement in the blood, it inhibited phagocytosis, it lessened the resistance of the red corpuscles to haemolytic agents, and, as had been shown by Laitinen in regard to *B. typhosus*, it injured the bactericidal power of the body fluids. Possibly alcohol acted as a protein sparer, but this was no therapeutic advantage. He supposed that most surgeons had given up the use of alcohol altogether in the treatment of shock. Even if its effect on the isolated heart was not paralysing from the first—a point in dispute—it was as a foodstuff for the heart quite futile when compared with dextrose. The use of sugar in all armies and in the Boer war illustrated this point. His final opinion was that alcohol should be avoided as a therapeutic agent, if only on account of its habit-producing properties. The disadvantages of the drug far outweighed its advantages, and the speaker, at any rate, would not employ it.

Professor Cushny said that methods of experimentation were very often fallacious. The "isolated" heart, for instance, was unprotected by the plasma, and was much more susceptible to drugs. In intact animals he had

always found a weakening of the heart beat from the outset when alcohol had been administered. The idea that alcohol was a stimulant drug of any importance to man must certainly be dismissed; he did not, however, share the view that alcohol could be called a deadly poison in infective processes. It had certainly been shown that in intoxicant doses it rendered rabbits much more liable to infection, and all would agree that the same held good for man. But as the doses used had become smaller, the results had become increasingly indefinite, and he concluded that very moderate drinking could in no way be considered to lessen the resistance to infection. Alcohol, like chloral or opium, was of real use in medicine by making life more tolerable to the patient.

Dr. F. J. SMITH, speaking as a practising physician, said he now used alcohol very sparingly in hospital work, but he could not honestly say that the results of treatment were one whit better or worse than in the days when it was used in enormous quantities. He prescribed alcohol in practice first because it often made life tolerable for his patients. It induced hope, and hope and the results of hope could not be measured by experiment. Secondly, he prescribed it to patients who had found that it had helped them to eat. In such cases he believed it acted indirectly as a tonic.

Mr. M. C. CORNER said he had found whisky of great service in old people with rheumatic pains, and in cases of lung trouble where there was tight breathing and the skin was not acting well. He had used brandy with success in heart disease, and had given it per rectum in cases of collapse in midwifery. Possibly peripheral stimulation of the mouth and gullet by alcohol played a part of some importance in the therapeutic action of alcohol, and this explained some of the conflicting results obtained by experiments on animals on the one hand and clinical experience on the other.

Mr. F. S. KIDD objected to experiments on animals with alcohol being put before the general public as if the results obtained from them held good for human beings. Sir Victor Horsley had spoken of the effect of alcohol in diminishing resistance to infecting organisms, but the speaker would like to ask what effect alcohol had on, say, the pneumococcus itself? Did it not diminish its vitality? He had himself been injecting alcohol into urethrae infected with gonococci, and he had found that the gonococci were considerably the worse for the injection.

Dr. HYSLOP said the question whether he was justified in using alcohol had often come before him in the treatment of mental disease, for he had often encountered grave conditions of insomnia which seemed to be untouched by all hypnotics. He recognized that alcohol—like chloral, bromide, and other drugs—exerted a deleterious effect on brain cells, but he thought it might occasionally be used as an alternative. The ordinary nightcap he regarded as exceedingly deleterious. He believed that the hypnosis produced by alcohol was in the nature of an auto-intoxication, for the oxygen used to eliminate the alcohol was drawn from the supply available for oxidizing the ordinary waste products of metabolism. For this reason a subject in whom sleep had been induced by alcohol woke up feeling very tired. In asylum practice alcohol had gradually been eliminated from diet as well as from therapeutics.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on April 3rd, Dr. F. R. MUTCH in the chair, Mr. A. R. ANDERSON described six cases of *Obturator hernia* recently treated at the General Hospital. Five of these patients were elderly females, and in one case the condition had recurred six months later. In none of the cases was a lump to be felt in the thigh, nor was there any special pain along the obturator nerve. In fact, in all those cases the symptoms were those of intestinal obstruction, and in all cases an abdominal operation was performed for its relief. In regard to these cases in general, the patient should be placed in the high Trendelenburg position as soon as the cause of obstruction had been localized. In most cases the bowel was severely nipped by the fibrous arch of the obturator membrane forming the border of the canal, and this was likely to produce gangrene of the gut. With a view to performing a radical cure in women a portion of the broad ligament should be sewed over the opening. In men a flap of the obturator internus muscle should be turned over the opening. The mortality of the six cases recorded was 50 per cent.; it was due to the great difficulty in diagnosing the herniae. It was therefore worth while in the case of an old woman suffering from signs of partial intestinal obstruction to bear in mind the possibility of an obturator hernia being present.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on April 2nd, Dr. CONSTANCE LONG, President, in the chair, Dr. JANET LANE-CLAYPON gave an address on the work and aims of the Research Defence Society. It was founded in 1908, and one of its chief objects was to make generally known the work carried on by experimentation upon animals. Lord Cromer, the first president, had recently resigned, and had been succeeded by Sir David Gill. The society boasted a list of illustrious vice-presidents, to which the names of Mr. Balfour and Sir Edward Elgar had recently been added. The administration consisted of a Central Executive Committee with various branches in England and Scotland, also one in Dublin. The speaker went on to state that there were many educated and intelligent people who had no true conception of the methods whereby experimental work on animals was carried on. Certificates were necessary for every variety of research work performed upon animals—even such a simple step as a feeding experiment could not be undertaken without this permission. In addition, all laboratories concerned were subject to surprise visits from inspectors who travelled about the country for this purpose. Reference was made to a few of the more important points in the recent report of the Royal Commission on Vivisection. That Commission had begun its work by investigating various charges brought against the Home Office and against individual workers, and had finally decided that the witnesses produced by the antivivisectionists had misunderstood or misinterpreted the nature of the experiments under consideration. Another important phase of work considered by the Commission was the advancement of science due to experimentation upon animals. For example, with one or two exceptions, no narcotic drug had been introduced into the *Pharmacopoeia* before experiments as regards action and dosage had been performed upon animals. Passing to the work of the society, reference was made to diphtheria antitoxin, and tables were shown illustrating the great advantages resulting from its use. Plague was next considered. The area of distribution of the disease had grown enormously, owing to increased trading facilities and the consequent transportation of rats during the last twenty years. The natives of India had long recognized that where there were no rats there was no plague. A French observer first pointed out the connexion between fleas and the disease, and Dr. Liston, I.M.S., was the first to describe special rat-fleas, at the same time showing that each animal has its own species of flea, which will not, under ordinary circumstances, bite another variety of animal. He also demonstrated the presence of *Bacillus pestis* in the blood of fleas from infected rats. Experiments on these lines, with confirmatory results, were performed last year at the Lister Institute in connexion with the outbreak of plague in Suffolk. Lastly, reference was made to Haffkine's vaccine and the great reduction in mortality which had followed its use.

THE ninth meeting of the Association Internationale de Perfectionnement Scientifique will be held this year from August 10th to September 6th in the Balkans, Turkey, and Greece. The Congress, starting from Aix-les-Bains, will visit Venice, Trieste, Agram, Belgrade, Kazan in Bulgaria (by the Danube), the Iron Gates of the Danube, Bucharest, Sofia, Constantinople, Mytilene, Smyrna, Athens, Eleusis, Olympia, and Corfu. The final meeting will be held at Evian-les-Bains. Further information may be obtained by application to the Secretary, Rue François-Millet, Paris XVI.

Reviews.

OPHTHALMOLOGY.

A new edition of Swanzy's *Diseases of the Eye*[1] is always welcome, and this—the tenth—appears under the joint authorship of Sir Henry Swanzy and Dr. Louis Werner. It is rather different in appearance from the nine preceding editions, being bound in dark blue covers instead of the familiar red, and the volume itself is rather larger; but, with these exceptions, it is the same old friend that the junior and middle-aged generations of ophthalmic surgeons have known all their professional lives. Without in any way reflecting on the excellence of many contemporaries, we must confess that "Swanzy" holds a place in our affections which is not shared by any other book. Although it is nothing like so large a volume as many, containing only a little over 600 pages, which is fewer than in some of the earlier editions, yet there is scarcely anything one ever wants to look up that will not be found in it; in fact, we are unable to find anything omitted which is of the slightest importance. It is so well written and compiled that it is always a pleasure to read any part of it. The arrangement of the present edition differs slightly from the others. The earlier chapters now treat of the normal eye and its functions, and the methods of examination, while abnormalities of refraction are transferred to Chapter XV. The appearance and also the value of the book is much enhanced by the inclusion, for the first time, of nine coloured plates, which contain twenty-one figures, all taken from the original paintings of Dr. Werner. These are beautifully drawn and reproduced. There are also in the text a good many reproductions of photographs and drawings. The theories of colour vision and the tests are all carefully given. The Remy diploscope is described, as well as the diaphragm test of Harman. A most careful and detailed description is given of the removal of cataract. An evident preference is shown for the operation done in the usual way with iridectomy. The authors describe the "simple" extraction, and also give brief directions for removing the lens in its capsule after the manner so ably advocated by Colonel Henry Smith of the Indian Medical Staff. In describing the operation of discission for cataract, the method of introducing the needle through the cornea is described and figured, though what most people now consider the safer plan of introducing the needle into the anterior chamber subconjunctivally is also mentioned. It is considered that this operation is applicable to all cases of cataract occurring in people up to 25 years of age. The appendix is composed of the rules and regulations regarding eyesight for the British Army and the Royal Navy, the Home Civil Service, the various departments under the Indian Government, and the Royal Irish Constabulary, and the Board of Trade tests for the British Mercantile Marine. At the extreme end of the book there are specimens of sixteen different coloured wools illustrating the Holmgren test for colour vision. We should like to have seen other and more satisfactory tests for colour blindness illustrated, for this test has been so often proved to be unreliable that its perpetuation is rather a pity in a book so thoroughly up to date as this is, especially as it is the only one thus singled out for special illustration. We cannot too highly praise the book, and we feel assured, after most careful perusal, that it will continue to hold the highest place among books of this sort, a position it won for itself many years ago.

There is now being brought out *An International System of Ophthalmic Practice*[2] edited by Dr. Walter L. Pyle, of Philadelphia, in several volumes; that on Pathology and Bacteriology is written by E. Treacher Collins, F.R.C.S., and M. Stephen Mayou, F.R.C.S. It is a well got up and handsome book, consisting of about 550 pages, with three coloured plates and 237 figures in the text. The subject is divided into seven chapters. Chapter I deals with aberration in development, Chapter II with neoplasms, Chapter III with derangements in the circulating fluids of the eye and of the vessels in which they are contained, Chapter IV with injuries, Chapter V with inflammation, Chapter VI with parasitic diseases affecting the eye, and the last chapter with degenerations. Besides these there is an appendix which is concerned with the practical methods of pathological and bacteriological research. The chapter on congenital defects is most interesting; in it the way in which these abnormalities are developed is discussed. In connexion with the development of metastatic growths it is stated that although there is no doubt that sarcomata are disseminated by emboli of cells from the parent growth, "it has recently been shown that secondary carcinoma is usually due to a process of permeation. The cancer cells at the seat of the primary growth extending into the lymphatics, then infiltrating, and growing along them to the surrounding parts." In treating of inflammation, a fairly full description is given of antitoxins, vaccines, opsonins, and all the various questions connected with this new method of treatment. It is impossible even to mention all the many matters which are discussed from the pathological and bacteriological standpoint, but it may safely be said that the book is a monument of the careful pathological work done by the authors during many years, while we know of no book which treats of this subject in such a concise form. It is particularly pleasing to find that it is not a mass of bibliographical references. These are all very well for actual research, but it is very distracting to the average student who reads the book for the purpose of getting a preliminary idea of the subject on which it treats. The appendix will be found very useful to practical workers.

[1] *Handbook of the Diseases of the Eye and their Treatment.* By Sir Henry R. Swanzy, A.M., M.D., D.Sc., and Louis Werner, M.B., F.R.C.S.I. Tenth Edition. London: H. K. Lewis. 1912. (Demy 8vo, pp. 652; figs. 237, plates 10. 12s. 6d. net.)

[2] *The International System of Ophthalmic Practice.* Edited by Walter L. Pyle, A.M., M.D., Philadelphia. Pathology and Bacteriology, by E. Treacher Collins, F.R.C.S., and M. Stephen Mayou, F.R.C.S., with three coloured plates and 237 figures in the text. London: Rebman, Ltd. 1911. (Roy. 8vo, pp. 583. 21s. net.)

PSYCHIATRY.

The terms "paranoia," "systematized delusional insanity," *délire de persécution*, and the old and now almost obsolete English term of "monomania" undoubtedly include many different pathological species. In the past this has been very largely due to considering too exclusively the character of the delusions—whether of grandeur, of jealousy, of persecution, etc.—for the establishment of an autonomous psychosis, instead of grouping the symptoms according to their total and lifelong evolution, and, so far as possible, their causes and genesis. Systematized delusions may appear in the course of mental maladies of very different order and causation, whose common inclusion under one category introduces a regrettable confusion into the nosography of mental diseases and invalidates comparative statistics. In the interests of scientific precision, therefore, any careful study of a particular group separated from the heterogeneous collection of paranoia, such as is to be found in *Les Folies raisonnantes* by Drs. Sérieux and Capgras,[3] physicians to the asylums of the Seine Department, makes for accurate classification, and should be of value. From the classification of chronic systematized delusional insanity (*délires systématisés chroniques*) they disengage a nosographical type which they call "*psychose chronique à base d'interprétations délirantes*," or, more shortly, "*délire d'interprétation*," corresponding roughly to the non-hallucinatory paranoia of Kraepelin or the *Beziehungswahn* of Wernicke. A delusional interpretation they define as a false reasoning having for its point of departure a real sensation or an exact fact. A delusional interpretation differs from a delusional idea in that the latter is a creation, whereas the former is a deduction. As Regis said, "a delusional interpretation is to a delusional idea what an illusion is to an hallucination." It is for this reason that the authors sometimes speak of a delusional interpretation as a "mental illusion." The insanity of delusional interpretation is, they say,

> a chronic systematized psychosis characterized by (1) the multiplicity and the organization of the delusional interpretations; (2) the absence or poverty of hallucinations and their contingence; (3) the persistence of lucidity and of psychic activity; (4) the evolution by progressive extension of the interpretations; and (5) incurability without terminal dementia.

There can be little doubt that this classification corresponds

[3] *Les Folies raisonnantes; le délire d'interprétation.* By Drs. P. Sérieux and J. Capgras. Paris: Félix Alcan. 1909. (Med. 8vo, pp 392. Fr. 7.)

to a definite type of mental disorder, and also that if cases presenting auditory hallucinations are to be excluded, that it is rare. As a matter of fact Kraepelin puts the frequency of his non-hallucinatory paranoia at less than 1 per cent., Mahaim (Switzerland) at between 1 and 2 per cent., Moreira and Peixoto (Rio de Janeiro) at 1 per cent., and Sérieux and Capgras at 1.1 per cent. of all admissions. Evidence is adduced tending to establish the proposition that in these insane the psychological mechanism of the interpretation does not differ from that of vulgar sophism, but that there are two characteristic traits which are pathognomonic. These are fixity and diffusion; or, otherwise expressed, incorrigibility and radiation. Fixity of error, however, is not peculiar to the insane. "There are," said Regis, "errors more tenacious than delusion." The fact which is at once the explanation and the stigma of the incorrigibility of the paranoiac delusion is its ego-centric character; in consequence the false idea is not regarded, as in obsession, as a strange element to be resisted or expelled, but is welcomed and employed in defence of the integrity of the subject; as del Greco said, it puts in play the instinct of conservation. Hence, paranoia is dominated by an original psychopathic constitution of definite "paranoiac" character. Doubtless there are many paranoiacs who are never certifiably insane. If, however, the paranoiac constitution and consequently a neuropathic heredity governs the causation, as determining factors first importance is assigned to emotional shock, particularly the summation of repeated shocks, chagrins, disillusions, real hostile acts. Of this a very good example is furnished by the life-history of the immortal paranoiac and genius, Jean Jacques Rousseau, who, driven from Paris under State order of arrest, driven again by the open hostility of the villagers from his refuge at Motiers, threatened by the Government of Berne, denounced by the Church and alienated from his old friends, developed upon an original character, vain, fearful, suspicious, and morbidly hyperaesthetic, systematized delusions of persecution. Of his slow but inevitable progression the authors give an able psychological analysis. No more need be said to indicate the value of this work. In its practical bearings, remembering the close relations of paranoia and criminal conduct, the often difficulty of diagnosis, and the consequent subtleties of defence, no type of mental disorder approaches this form of insanity in interest. On its theoretical side none other exceeds it in psychological value. For these reasons we cordially commend this careful study to our readers.

In a very careful and minute clinical study of dementia praecox and its position with regard to manic-depressive insanity, Dr. URSTEIN[4] discusses the results of his analysis of the clinical cases personally examined by him during two years. For several reasons the book is well worth reading. In the first place, because it exemplifies a method of study which has given excellent results in the hands of several recent observers—that is, the authors have not been content with observing cases merely in institutions, but have also studied in their own homes patients who have been discharged from asylums as improved and as recovered, it may be many years before. In the second place, it is worth reading because of its profoundly critical psychological analyses of such symptoms of mental disorder as are common to dementia praecox and manic-depressive insanity; and, lastly, because of the hints it affords as to diagnosis and prognosis in these two clinical forms. The term "dementia praecox" has been considerably restricted in recent years, with a corresponding increase in the number of cases diagnosed as "manic-depressive insanity." This change in clinical grouping has been brought about by refinements in diagnosis which appear to many in this country—and also, we note, to Dr. Urstein—as clinical hair-splitting. In view of the great importance to the patients and their relatives of prognosis and the favourable or unfavourable outlook, according as the case is diagnosed as one of manic-depressive insanity or dementia praecox, the differential diagnosis is of great importance. We may pass by any mention of Dr. Urstein's material, merely mentioning that it was more than adequate in amount; but it should be said that in all of the several hundreds of cases of dementia praecox upon which his work was based the diagnosis was absolutely certain. Dr. Urstein's first point is that many had formerly been diagnosed as manic-depressive insanity, but that later they proved to be undoubted katatonic dements (*kataton verblödet*); that is, that the mere presence of "circular" symptoms is insufficient to exclude dementia praecox or justify inclusion within the category of manic-depressive insanity. Even the history of a psychosis, characterized by circular symptoms and followed by temporary and full recovery, does not preclude eventual lapse into katatonic dementia. According to Dr. Urstein, the chief underlying condition of dementia praecox is a psychic disharmony or "intrapsychic ataxia," a splitting up of the personality. This separation of will and reason, as some of his patients expressed it, lies at the root of the katatonia which is so common a symptom of dementia praecox, and also explains, it may be remarked, the often noted resemblance of some of the symptoms of this disorder to hysterical phenomena. Further, as an illustration of this cleavage, Dr. Urstein has often noted a marked disharmony between oral and written expression—coherent speech with incoherent writing (word-salad) or vice versa. Here it may be mentioned that Kraepelin has described this condition in manic-depressive insanity, but Dr. Urstein evidently doubts the diagnosis in these cases of the distinguished Munich professor—at any rate, he has himself never encountered such cases. We cannot discuss Dr. Urstein's able analysis of the much-debated subjective psychic inhibition, but a few points may be mentioned in conclusion. Notwithstanding the frequency of circular symptoms in dementia praecox, Dr. Urstein thinks that dementia praecox is diagnosable in the beginning: (1) With regard to those beginning with circular symptoms but terminating in katatonic dementia, none that he has observed was initiated by pure mania. (2) If the attack began with melancholia the end-result might be either dementia praecox or manic-depressive insanity. Here an important differential-diagnostic point occurs: In no case ushered in by depression and terminating in a permanent katatonic state of dementia was the subjectively experienced psychic inhibition objectively confirmed. Whether outside melancholia there are other cases beginning with depression and showing neither subjective nor objective inhibition has not come within Dr. Urstein's experience, but if there should be any such they would, in his opinion, not belong to the category of manic-depressive insanity.

[4] *Die Dementia Praecox und ihre Stellung zum Manisch-Depressiven Irresein.* Ein klinische Studie. By Dr. M. Urstein. Berlin and Vienna: Urban and Schwarzenberg. 1909. (Sup. roy. 8vo, pp. 372. Mk. 15.)

CRIME AND INSANITY.

A SMALL book entitled *Crime and Insanity*,[5] by Dr. CHARLES MERCIER, forms one of the volumes of the excellent series of shilling books edited by Mr. HERBERT FISHER, Professor GILBERT MURRAY, and Professor J. ARTHUR THOMPSON, and published by Messrs. Williams and Norgate as the *Home University Library of Modern Knowledge*.

Dr. Mercier's contribution to this series may be regarded as a supplement to his book on *Conduct and its Disorders*. In Chapters I and II Dr. Mercier discusses, first, insanity and crime, and then describes in simple language the several forms of insanity. Dr. Mercier's views as to the nature of insanity are already so widely known that it is unnecessary here to discuss them. In the remaining chapters Dr. Mercier discusses crime and criminal acts, using the term "crime" not in the technical but in the wide sense of acts forbidden by law. Throughout Dr. Mercier views and explains crime from a biological standpoint, that is, "as militating, in one way or another, against the welfare of society, present or future." Based on this view of crimes as injuries to society, he treats of criminal acts according as they are international offences or national offences, the latter being again divided into public offences, which injure the State or society at large, and private offences.

From the biological standpoint there is much to be said for Dr. Mercier's classification, even if, as he would admit, much that is not regarded as a crime—in the wide sense already given—and of which the law takes no cognizance, would come within its purview. However far the reader

[5] *Crime and Insanity.* By Charles Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases to Charing Cross Hospital, etc. *Home University Library.* London: Williams and Norgate. 1911. (Fcap. 8vo, pp. 254. 1s. net.)

may dissent from the author's views of the essential nature of insanity and crime, there can be no doubt that his book ought to be and certainly will be widely read. As to the criminal, Dr. Mercier puts with his usual pith in one sentence a statement which would, we believe, be endorsed by every one with long experience of criminals—"The true distinction between the criminal nature or character, and that which is moral and law-abiding, is that, in one, self-indulgence overpowers the social instincts, and in the other the social instincts overpower self-indulgence."

ORTHOPAEDIC SURGERY.

THE third edition of BRADFORD and LOVETT'S *Treatise on Orthopaedic Surgery* was reviewed in the BRITISH MEDICAL JOURNAL of April 14th, 1906, p. 869. The publication now under notice[6] is a condensed form of that work, from which the discussion of alternative methods of treatment and of vexed questions of pathology has been omitted.

As far as the scope of the book allows, it gives a clear and succinct account of most orthopaedic conditions, and clear indications of the measures which the authors have found most useful in dealing with them. It should be useful to those students and practitioners who need a brief statement of the opinions generally accepted in the Boston school of orthopaedics as to the nature and treatment of the affections under consideration. It would have been more useful had it included such subjects as Dupuytren's contraction of the palmar fascia, congenital defect of the fibula, and some other less common conditions for which the inquirer must still refer to the earlier editions of the treatise or its compeers.

Such as it professes to be, and is, we recommend this book to our readers. It is well printed and well illustrated.

SPECULATIVE MEDICINE.

IN his massive work on *The Internal Secretions and the Principles of Medicine*[7] Dr. SAJOUS shows how much can be done by the application of a single idea to the physician's art. His single idea is to collect evidence from the literature to prove that it is the secretions of the ductless glands that regulate all the processes of life in the human body. Beginning with the suprarenal glands, his literary researches show him that their main function is to supply an internal secretion which absorbs the oxygen of the air to carry it to the tissues; this substance he calls "adrenoxidase." Adrenoxidase must be a chemical Proteus, for we read that it is identical with the albuminous moiety of the haemoglobin molecule, the ferment secretin, fibrin-ferment, amboceptor, the blood-platelets, and apparently (p. 1771) oxyhaemoglobin also; spermin consists mainly of adrenoxidase, while enterokinase consists of adrenoxidase combined with nucleoprotein. Dr. Sajous's literary investigations similarly enable him to throw much light on certain anatomical problems. Thus, he finds a new organ in the partition between the two lobes of the pituitary body; in mammals this new organ is the highly developed homologue of the test-organ or osphradium of lower forms (p. 1023), and contains the thermogenic centre, while the posterior lobe of the pituitary body contains the respiratory centre, and is also a general centre for all the cranial nerves concerned with common sensation and motion, pain, heat, cold, hunger, thirst, muscle sense—all functions, in fact, which require conscious and to a certain extent intelligent co-ordination. A little further on we read (p. 1056) that the anterior lobe of the pituitary fulfils in all higher animals the same function that the osphradium or test-organ does in various invertebrates and lower vertebrates, and that it has an elastic capsule which contracts periodically. Dr. Sajous similarly finds that the thyroid and parathyroid glands are not true glandular organs, and that their follicles have no secreting epithelium; but they have a secretion, formed of granules secreted by leucocytes derived from the alimentary canal or the circulation. The glands, with the suprarenals and the anterior pituitary body, constitute what he calls the adrenal system, whose function it is to sustain general metabolism, the vital process, and the body's auto-immunizing mechanism. Dr. Sajous's method further enables him to throw new light on many medical matters and problems. Thus he finds that cancer is primarily due to hypoactivity of the adrenal system, the result, in most cases, of premature senility; that inadequacy of the adrenal system is the primary cause of epilepsy; depravity of the adrenal system is the initial cause of tuberculosis of the larynx. Pernicious anaemia is due to the presence in the blood of toxic substances which, by overstimulating the test-organ, keep the blood sufficiently overladen with autoantitoxin to produce progressive haemolysis. Congenital syphilis is the expression of inherited inadequacy or quasi-paresis of the adrenal system, and should be treated with thyroid gland "as by all odds the most efficient agent in this class of cases." He finds that *Bacillus coli*, whether by rapid multiplication or the assumption of greater activity, can assume the virulence of the typhoid bacillus, so that typhoid fever may be caused without infection with *B. typhosus*. Dr. Sajous has garnished his book with many hundreds of quotations from the literature; it is clearly written, and redolent of close study and the midnight oil. It is probable that but few physicians or physiologists will be prepared to go as far as the author's numerous hypotheses and deductions have taken him, however; and it is impossible not to feel that the book gives internal evidence of an industry and ingenuity out of all proportion to the logical and critical faculties that have directed its composition. Nevertheless, it may be recommended to all who take an interest in the vagaries of unbridled medical and physiological speculation.

WESTMINSTER HOSPITAL REPORTS.

The Westminster Hospital Reports[8] for 1909–10 open with an instructive article by Dr. de Havilland Hall on phlebotomy and leeches, therapeutic methods which underwent rather sudden eclipse in the middle of the nineteenth century, but which have their moderate advocates still, the author being amongst them. Dr. Hebb contributes a short note, turning attention to certain misconceptions about the relations of the pathology of the kidney to clinical symptoms. Dr. Carmalt-Jones dwells on the action of calcium and decalcifying drugs, and shows how profitable work may be carried on in out-patient departments of hospitals, where many young physicians overlook or neglect their opportunities. Besides the more purely official reports of medical, surgical, and gynaecological work, and of pathology, and museum management, this volume is distinguished for several papers in the main text which are based on solid labour in the laboratory. Dr. Carmalt-Jones records the treatment of patients in the department of bacterio-therapeutics in the hospital. He dwells on improvement during treatment in a case of arthritis after inoculations with an organism obtained from the lung when no other septic focus could be found. In Dr. Carmalt-Jones's opinion this channel of infection seems to have been generally neglected. The mouth, bladder, and colon are frequently explored with a view to finding organisms which may have been the cause of lesions in distant parts, but the extensive surface of lung tissue has hitherto been more or less overlooked in spite of the frequency of tuberculous arthritis and the occasional occurrence of pneumococcal arthritis. Dr. Braxton Hicks reports observations on an instance of absolute as distinguished from relative polycythaemia, and contributes also a memoir on one of the most prominent of current pathological and clinical subjects, entitled, "The Technique of Two of the Modifications of Wassermann's Reaction for Syphilis."

THE INSURANCE ACT.

IN the space of just over 100 pages the author of *The Insurance Act and Yourself*[9] has managed to explain in a

[6] *Orthopaedic Surgery.* By Edward H. Bradford, M.D., Surgeon to the Boston Children's Hospital, etc., and Robert W. Lovett, M.D., Associate Surgeon to the Boston Children's Hospital, etc. London: Baillière, Tindall, and Cox. 1912. (Roy. 8vo, pp. 418, 364 figures. 14s. net.)

[7] *The Internal Secretions and the Principles of Medicine.* By C. E. de M. Sajous, M.D., LL.D. Fourth edition. Two vols. Philadelphia: F. A. Davis Co. London: Stanley Phillips. 1910. (Roy. 8vo. Vol I, pp. 827; figs. 44. Vol. II, pp. 801–1873; figs. 24. Price, two vols, 50s. net cloth; 63s. net half morocco.)

[8] *The Westminster Hospital Reports.* Edited by E. D. Macnamara and E. Rock Carling. 1909–10. Vol. XVII. London: University of London Press. 1911. (Med. 8vo, pp. 215. 6s. net.)

[9] *The Insurance Act and Yourself; the Benefits of the Five-Handed Giant—Medical, Sanatorium, Maternity, Sickness, Disablement.* By Horace B. Samuel, M.A., Barrister-at-Law. London: T. Murby and Co 1912. (Cr. 8vo, pp. 109. Price 6d. net.)

clear and correct manner practically all the salient points in the Act in a way that anyone quite fresh to the subject can easily understand. The introductory chapter, after explaining how it is immediately possible to insure persons of any age for the same premium as those of the age of 16, lays it down as the root principle of the Act that it is a scheme of compulsory insurance under friendly societies rather than compulsory insurance with the State, or, in other words, that the Act turns the 13,000,000 or 14,000,000 people who live on or near the border line of the living wage into a vast network of friendly societies conducted by themselves under the financial assistance and auspices of the State. The qualifications necessary for compulsory insurance are next described and the amounts and method of paying the contributions by the different classes of the insured. With a zeal for the Act which the author takes no trouble to conceal, he calls it a five-handed giant distributing five distinct classes of benefits. Perhaps the weakest part of the book is that dealing with medical benefit, as few details are given and none of the difficulties are properly explained. Some of the statements are, indeed, not supported by the Act itself; for example, it is stated that when the income limit is fixed for medical benefit, "those above the limit will be given in cash the average cost of medical attendance in the district to which they belong, and out of that sum they will have to provide their own doctor, medicine, etc." This is perhaps not exactly contrary to the wording of the Act, but it is not generally understood that the persons above the income limit will have the actual handling of the money themselves. Again, it is stated definitely that where contract service appears to the Commissioners to be undesirable or impracticable "the sums which would otherwise have been paid in medical benefit will be paid into a central pool, and the doctor's bill will be paid in the first instance out of the pool, while the balance, if any, will be defrayed by the contributor." The author is hardly justified in stating this so categorically, for there is nothing in the Act to compel any such arrangement, which is simply an idea put forward among many others to meet the objections of the medical profession to contract practice. The author's description of the other benefits is far more satisfactory, and under the heading "Insurance of the Uninsurable" the account of the position of the deposit contributors is very good. Special care has been taken in describing fully the position of clerks and domestic servants, and an attempt is made to explain all the complicated provisions about married women. Next comes a short account of the provisions for special classes, such as aliens, soldiers, sailors, and the inmates of charitable institutions, and an excellent description of the position of present members of the friendly societies. The author is too much inclined to gloss over the difficulties and defects of the Act, though, on the whole, his descriptions and explanations are concise and clear and well suited to those who desire to have the Act put into plain and easily understood language.

The National Insurance Act,[10] a pamphlet by Mr. J. B. PIKE, Honorary Surgeon to the Loughborough General Hospital, is well got up on art paper, with blank pages for notes, and it is throughout a consistent attack on many provisions of the Act. The writer expresses some doubt as to whether the principle of compulsion is the best at the present time, and he describes the obligation of the Act upon employers and employed as a "widely-distributed poll-tax," which, with most employers, will be "decidedly unpopular." The scheme for additional benefits is spoken of as "Utopian" and sickness benefit as "giving a stone for bread," the writer's opinion being that it would need £1 a week for thirteen weeks to make this benefit a substantial help. Of medical benefit he says the weakest spot in the Act is that "it panders to the well known cheap contract methods of the friendly societies," and that it "would perpetuate some of the worst features of the friendly society medical associations, and would inevitably lead to inferior and perfunctory work." The following quotation well shows the attitude of the author:

> It is assumed by the Liberal press that the suspension of medical benefit under the Act would be disastrous for the doctors. It would, in fact, be the best thing that could happen for them. By the organization of public medical services throughout the country, independent of lay control, the profession can work side by side with the Act and in co-operation with its legitimate aims. This is the true solution of the present impasse, and the feeling in favour of it is rapidly gaining ground. . . . Medical men are looking forward to victory in this conflict, and for them it is intolerable that conditions of service similar to those they have condemned should be imposed upon them by the Government. No method of working the medical clauses of the Act will be accepted which does not ensure freedom from control of lay committees.

The pamphlet appropriately ends with an appendix giving the rules and by-laws of the Loughborough Provident Medical Association, which is managed by the medical profession of Loughborough, all of whom may be on the medical staff of the association. From these rules it appears that members are workers earning weekly wages, and their families, provided that the aggregate weekly earnings of the family do not exceed £2. Each member pays 1d. a week, families of more than six persons being admitted at 6d. a week. For this they receive medical attendance and medicines, and a collector is paid for collecting the contributions. It would be interesting to know at how much each visit or consultation works out for what appears to be a very low contribution.

Can the Doctors Work the Insurance Act?[11] is the title of a shilling book by Mr. E. W. LOWRY, M.R.C.S., L.R.C.P. On the title page it is claimed that it is "published with the approval of Robert Saundby, M.D., President of the British Medical Association; Sir James Barr, Bart., M.D., President-elect of the British Medical Association; and Frederick J. Smith, M.D., Chairman, British Medical Association Reform Committee." No doubt the President and President-elect would explain that their approval is purely personal and not official; in more than one particular the opinions expressed by the author are not altogether in accord with the decisions of the Representative Meeting. The book deals only with the Act as it affects medical men, and begins by stating that the position of the doctors under the Act would be that of "underwriters" of it. It is said that the Act violates the elementary principle of insurance, which is that the risk of the individual should be borne by the collection of individuals, and that it "imposes upon the doctor or underwriter those very risks which the State has been so careful to itself reject." Four classes of cases in point are mentioned: (1) The Post Office contributor who "is to receive unlimited medical treatment free, but is only to receive sickness allowance up to the amount of his deposit"; (2) persons over 70 years of age whose sickness benefit ceases but whose medical benefit continues throughout life; (3) accident compensation cases, where "medical benefit is still free but cash is carefully withheld"; and (4) diseases of misconduct where "again the doctor must cure while the State will not pay." There is, of course, truth in all this, but in each case less than the whole truth is told, though the author's case would not have suffered by the whole. Dr. Lowry is at his best when he is contrasting the character of the work now done by club doctors with that to be done under the Act, and he makes out a good case for a considerably higher sum than 6s. for medical benefit. He shows well, too, the reasonableness, from both the public and the professional standpoint, of the six cardinal points, which, as he says, are not definitely secured, without mental reservation, in the Act. The discussion of consumption and sanatorium benefit is open to the criticism that Dr. Lowry has put an interpretation on the provisions of the Act which appears to be contrary to their plain meaning. If we understand Dr. Lowry aright, his argument is that sanatoriums are not for all forms of tuberculosis, but for early cases of consumption of the lungs; he makes the statement that "in some distant future, when the additional benefits are no longer additional, tuberculosis as a whole might indeed be included." He further says that "each and all of the uncured cases [of consumption, on their discharge from sanatoriums] will come home and will have to be attended to their last breath in their own homes by their insurance doctor." So far as we can find, however, "con-

[10] *The National Insurance Act.* By J. B. Pike, M.R.C.S., L.R.C.P., Honorary Surgeon to the Loughborough General Hospital. (Pp. 15, price 3d.)

[11] *Can the Doctors Work the Insurance Act?* By Ernest Ward Lowry, M.R.C.S., L.R.C.P. London: Watts and Co., Fleet Street. (Pp. 64. 1s. net.)

sumption" is nowhere mentioned in the Act; the term used is "tuberculosis," and we can only suppose that it was used to include every form of disease associated with the tubercle bacillus. Dr. Lowry, indeed, implies that it only refers to consumption. He says: "Everybody, except perhaps the framers of the National Insurance Act, knows sanatorium treatment applies only to the very early cases of consumption of the lungs," but here he appears to assume that sanatorium treatment is the same thing as sanatorium benefit. The truth is, as the Act explicitly states (Sections 8 and 16), treatment in a sanatorium is only one form out of several in which sanatorium benefit may be given. It may, for instance, be given as treatment in "other institutions" than sanatoriums, or it may be given "otherwise" than in sanatoriums or other institutions, as, for instance, at tuberculosis dispensaries or at the homes of the patients. The only interpretation we can put on the words of the Act is that sanatorium benefit is not only, as Dr. Lowry implies, for early cases of consumption but for advanced cases and for every form of tuberculous disease, as well as for non-tuberculous diseases that may be appointed by the Local Government Board. Sanatorium benefit if properly administered—and on this point of policy we shall be better able to judge when the interim report of the special Treasury Committee on Tuberculosis has been issued—ought materially to lessen the work of the doctors on the panel under the head of medical benefit. It is well fully and frankly to acknowledge this, as nothing is to be gained by overstating the case for the profession, especially as Dr. Lowry has very well shown that in numerous other ways the work of the doctors on the panel, compared with the work of present club doctors, will be increased to an extent which must far more than neutralize any relief afforded by sanatorium benefit. Another point on which Dr. Lowry appears to have misinterpreted the Act is in his reference to chemists; they are, he says, "asked to contract at the known rate (1s. or 1s. 6d.) for the supply of the unknown amount of medicines and appliances." We do not find in the Act any suggestion of payment per capita for chemists. Clause 15 (5) (*a*) provides that drugs, medicines, and appliances are to be supplied "according to a scale of prices." Moreover, when Dr. Lowry goes on to agree with Mr. Lloyd George that the "doctor should be separated from the drugs," and to argue that "it should be illegal for the doctor to dispense except in country places or on emergency," he is distinctly opposing the demand of the Special Representative Meeting, which has already been communicated to the Commissioners, that those doctors who so desire should be allowed to dispense for their own patients. The last part of the book is an argument in favour of the method of payment per attendance rather than payment per capita, the system of the National Deposit Friendly Society being regarded as a fair solution of many difficulties. On the whole the book is well worth reading, as it represents the view of a man with practical experience which enables him to speak with knowledge.

NOTES ON BOOKS.

THE fact that Dr. HERMANN MARX'S monograph on the malformations of the ear[1] has satisfied the editorial requirements of Professor Ernst Schwalbe is sufficient guarantee for its acceptability as a standard work on the subject. It forms a chapter in Professor Schwalbe's textbook on the malformations of man and animals, and the inclusion in it of a consideration of the malformations of the organ of hearing in the lower animals affords the author increased scope for illustration. The chapter is in two parts, the first being devoted to malformations in viable embryos, the second to those in the non-viable. This division has the merit of being practical, the former having a clinical importance which the latter does not directly possess. The separate parts of the hearing organ are taken in turn, and are discussed in relation to the characters, frequency, and genesis of malformations. Those of the auricle are freely illustrated, a picture being given of the only published case of total absence of this part (p. 577). The so-called duplication of the meatus is held to be a fistula of branchiogenic origin, always ending blindly and being less developed than the meatus (p. 582). The possibility of absence of the tympanic membrane as an embryological malformation is discussed and rejected. Altogether the important and intricate subject is invested with the utmost interest by the writer of this monograph, which is alike compact and exhaustive.

[1] *Die Missbildungen des Ohres.* By Hermann Marx. Jena: Gustav Fischer. 1911. (Sup. roy. 8vo, pp. 565-632.)

The newest enterprise of that very useful institution, the Sleeping Sickness Bureau, is the *Kala-Azar Bulletin*. It is edited by Dr. C. M. WENYON, and is to appear quarterly. The first two numbers, for December, 1911, and March, 1912, consist of summaries of recent observations and investigations. We have received also a special fasciculus consisting of a list of references prepared by Mr. Sheppard, Librarian to the Bureau. The Sleeping Sickness Bureau ought to change its name to the Tropical Medicine Bureau, and we have heard a rumour that it may shortly do so.

The City of London Year Book,[2] being brought ou annually at a date when the principal changes of address and of the membership of councils have been effected, is a civic directory of a specially reliable kind. In the present, as in the preceding issues, ample information is supplied as to the principal institutions in the City of London, the committees by which its affairs are administered, and as to the schools and other more or less charitable undertakings owned by the various guilds.

We have received at odd times recently several fasciculi of a handbook on venereal diseases which is appearing under the editorship of FINGER, EHRMANN, and GROSZ of Vienna and JADASSOHN of Bern.[3] Those parts which are already in our hands are excellent, and we can certainly recommend the work, if the rest is of the same high standard. The first volume contains a large number of articles dealing with venereal diseases generally and gonorrhoea and its sequelae specially. Professor Jadassohn has contributed a most instructive account of the etiology and general pathology of gonorrhoea, covering some 150 pages, in which we find a wealth of information. Not less ably treated is the subject of the various forms of urethritis by Dr. Grosz. The second volume continues the subject of gonorrhoea and includes some first-class articles. The names of Grosz, Mucha, Nobl, Baschka, and Menge guarantee its excellence. The subject of syphilis is to be treated in the third volume.

[2] *The City of London Year Book, 1912.* London: W. H. L. Collingridge, "City Press" Office, Aldersgate Street, E.C. (Sup. roy. 8vo, pp. 382. Price 5s. net.)

[3] *Handbuch der Geschlechtskrankheiten.* Edited by Professor E. Finger, Professor Jadassohn, Professor S. Ehrmann, and Dozent S. Grosz. 1910-1911. Vienna and Leipzig: A. Holder. Vol. I. (M. 27.50.)

MEDICAL AND SURGICAL APPLIANCES.

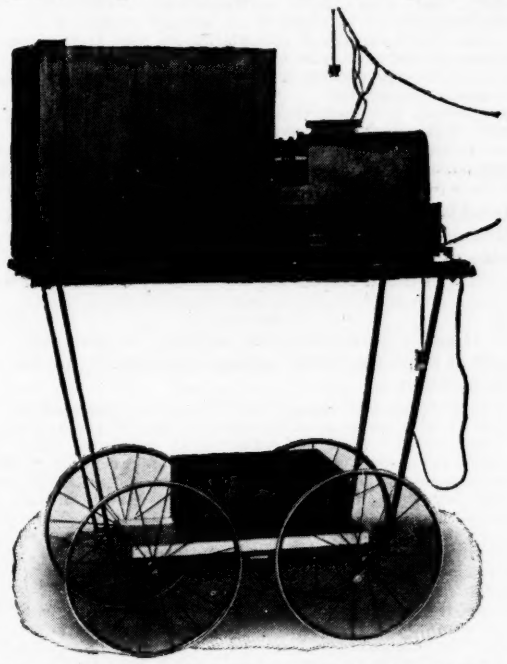
A "Universal Machine" for Electrical Applications.

THE Sanitas Electrical Company, Limited (61, New Cavendish Street, W.), has issued a pamphlet describing an improved earth-free "multostat," or "universal" apparatus for medical electricity. The "multostat" is something of a marvel in compression, for it contains on one small base all the adaptations necessary for a variety of purposes. Thus it can be utilized for galvanization, including the application of the galvanic current in electrolysis, ionic medication, and the like, and for sinusoidal faradization. The machine is also available for cautery and light, for vibratory massage, for surgical operations with burrs and trephines, and for a number of other requirements. One of the adjustments is a special condenser, intended to supply what is described as true galvanic current instead of the strongly pulsating semifaradic galvanization generally given by the universal switches. The condenser acts as a sort of buffer to eliminate the fluctuations.

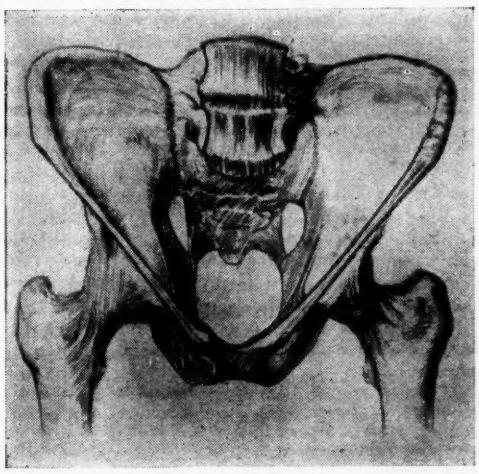
A Portable Demonstration Apparatus for Lantern Slides.

Dr. HENRY JELLETT (Master, Rotunda Hospital, Dublin) writes: This apparatus was devised by me for the purpose of enabling lantern slides to be shown to a class of students in the wards of a hospital, or in any other place where it is impossible to use the ordinary lantern and screen. As will be seen from the photographs, it consists essentially of a square box, one side of which is formed by a screen of ground glass, while into the opposite side projects the nose of a fixed lantern. Both are mounted on a wooden baseplate, which keeps them permanently fixed in their proper relations to one another. There is also fixed to the baseplate a small resistance, and a switch for the control of the electric current. The source of illumination is a small

open arc lamp with a hand feed. The base-plate is in turn mounted on an iron frame with four wheels, and can thus be readily moved from ward to ward. A tray placed between the wheels forms a convenient place for carrying the box of slides or any other fittings. The screen on which the image is formed is two feet square, and the



length of the apparatus over all is about four feet. The second illustration is a photograph of the actual image as it appears on the screen. I have now been using the apparatus regularly for the past year, and have found it of the greatest assistance in demonstrating operations or anatomical or pathological conditions to students. It is quite unnecessary to darken the room in which it is used. All that is required is to place it in such a position that a direct light does not fall on the screen, or is not directly behind it. If it is placed with its back to a window, the blind of which has been drawn down, slides will show with



perfect distinctness. The lamp uses quite a small amount of current, and so can be worked off any wall bracket or plug of the existing system. It works equally well with a direct or an alternating current, but of course the resistance fitted on the stand must be suited to the voltage of the electrical supply. I hope the apparatus will shortly be on the market, and I believe it will be found of great value by any clinical teacher. Diagrams are notoriously difficult to use in a ward, since they take up so much room and so are necessarily limited in numbers. Further, a good diagram costs nearly a guinea to buy, and rapidly gets out of date. Lantern slides, on the other hand, can be made from any existing drawing or illustration and usually cost about a shilling each, or one can make them at a cost of a few pence. Consequently one can have a much greater variety, and has no hesitation in throwing them away as they get out of date.

LONDON WATER.

EXPERIMENTAL SEARCH FOR PATHOGENIC MICROBES.

THE Seventh Research Report of Dr. A. C. Houston, Director of Water Examination to the Metropolitan Water Board, has just been issued. It is divided into six sections. The first report dealt with the vitality of "cultivated" typhoid bacilli in *raw* river water, and the sixth with the comparative vitality of "uncultivated" and "cultivated" typhoid bacilli. The present report extends and confirms these later observations.

"Cultivated" and "Uncultivated" Typhoid Bacilli.

Typhoid bacilli which have been isolated from a case of typhoid fever and grown on artificial media in the laboratory are known as "cultivated" bacilli. "Uncultivated" bacilli, on the other hand, are bacilli which have never been subcultured, and which exist in the blood, organs, tissues, or excreta of persons suffering (or who have suffered) from typhoid fever. The danger of contracting typhoid fever from impure water supply is due to the possible presence of "uncultivated" typhoid bacilli. In the past, bacteriologists have based their conceptions of the vitality of the typhoid bacilli in water on the results of experiments carried out with "cultivated" bacilli. Dr. Houston goes on to say that with the object of clearing up this point, a careful examination was made of the comparative vitality of "cultivated" and "uncultivated" typhoid bacilli, and the striking result has been established that the latter die in river water much more rapidly than the former. In 13 experiments with the "uncultivated" typhoid bacilli, the micro-organism could not be found in the infected water after one week (9 experiments), after two weeks (3 experiments), and after three weeks (1 experiment). Yet the same microbes after "cultivation" usually lived over five weeks. If, says Dr. Houston, one may conclude the results of particular experiments to be generally applicable, this is a matter of vital importance to consumers of London water, and a most gratifying circumstance in relation to storage. He urges, however, that these discoveries should be regarded as happy omens for the future safety of the metropolis, and not as pretexts for excuse for delaying or curtailing the execution of contemplated purification works. "They should indeed be considered assets in the bank of security which cannot justifiably be pledged so as to save future expenditure."

Typhoid Carriers.

Particulars of experiments with a "typhoid carrier" (a man) are given and compared with the observations made on the urine of a female "carrier" described in the Sixth Research Report.[1] The results in the male case amply confirm those previously noted. Evidence that "uncultivated" typhoid bacilli die much more speedily in river water than their "cultivated" brethren is of far-reaching importance, inasmuch as the danger of drinking polluted water (*qua* typhoid) is solely due to the possible presence of the former.

Storage of Raw Water.

The cumulative evidence in favour of storage of raw river water is now, says Dr. Houston, so strong that it is difficult to escape the belief that thirty days' storage of river water is tantamount to sterilization, as far as the microbes associated with water-borne epidemic disease are concerned.

Effects of Temperature on Typhoid Bacilli.

Details are given of experiments on the comparative vitality of the typhoid bacillus in *raw* Thames water at different temperatures. The following are Dr. Houston's conclusions:

Temperature exercises a powerful influence on the vitality of the typhoid bacillus in *raw* river water.

The typhoid bacillus lives considerably longer at low (32° to 41° F.) than at higher (50° to 98.6° F.) temperatures. The big initial drop in numbers, always observed in connexion with storage experiments with typhoid bacilli, is delayed to a notable extent when the temperature falls 9 or more degrees below 50° F.

The mean temperature of river water (about 51° F.) favours the rapid death of typhoid bacilli. For seven months in the year the mean river temperature of about 58° F. is specially unfavourable to the sustained vitality of the typhoid bacillus.

[1] See BRITISH MEDICAL JOURNAL, February 4th, 1911, p. 261.

During the remaining five months of the year the mean temperature of about 41° F. is much less favourable to the rapid death of typhoid bacillus.

Even at freezing point, however, the reduction of typhoid bacilli by the second week was over 99 per cent. on the average, and by the fourth week only 1 survived out of every 3,039 added initially.

The three critical low temperature months of December, January, and February lag considerably behind the three critical typhoid months of September, October, and November.

The results show the immense practical importance of *adequate* storage, *not* the *inutility* of storage, under low temperature conditions.

In the case of the metropolitan water supply, Dr. Houston is of opinion that even in the coldest months of the year four weeks' storage of river water antecedent to filtration affords reasonable, if not absolute, protection from water-borne diseases.

Other sections of the report are devoted to observations on the biological characters of *B. coli* isolated from (1) raw river water; (2) stored river water; and (3) stored and filtered water, rapid sedimentation, and the advantages of occasionally using precipitation methods antecedent to the storage of raw river water in large reservoirs. The results of the experiments are given in tables.

Prestorage Settlement.

In his conclusions Dr. Houston recalls the fact that in his Third Research Report attention was called to the desirability of passing the *raw* river water first through a small settling reservoir before entering the storage reservoirs proper. He goes on:

It is most important that the reservoirs in which the river water is stored in *bulk* should be kept as free from impurities as possible. In the foregoing pages it has been shown that prestorage settlement in reservoirs holding less than one day's flow of water reduces considerably the number of bacteria and also improves the water materially, as judged by chemical tests. By adopting the principle of prestorage settlement, a large amount of suspended matter would be kept out of the storage reservoirs proper, and the impounded water would contain less ammoniacal nitrogen and albuminoid nitrogen, less oxidizable matter and be slightly less brown in colour, and would probably be less conducive to the not infrequent growth of troublesome algae, at certain seasons of the year.

Such partially purified water would be better fitted to undergo those processes of purification which normally occur under conditions of storage, and, as previously suggested, would probably be less apt to encourage the excessive growth of algae and aquatic plants.

Despite the remarkable improvement effected by storage, even when much of the river water passed into the storage reservoirs is far from satisfactory, it seems unwise to trade too greatly on this circumstance if any practicable remedy, even of a partial kind, is available.

The gross amount of suspended matter which passes into the reservoirs year by year is enormous, and if its accumulation seems very gradual it is none the less certain. Moreover, part of it is decomposable, and in the process of its decomposition the general body of water in such reservoirs may be prejudicially affected.

Prestorage settlement reservoirs are so comparatively small that the occasional emptying and cleansing of them presents no very serious obstacles. The desirability of interposing large storage reservoirs between the river and the filters is now generally recognized. The suggestion would not seem to be in any way impracticable, that the river water should first be caused to flow through a relatively small prestorage reservoir before passing into the big storage reservoirs proper. No doubt a chain of reservoirs effects the same object, but it is necessary to bear in mind that the kind of purification here dealt with is *mechanical and rapid*, and that therefore the reservoirs nearest the river should be relatively so small as practically to fulfil the requirements of the prestorage reservoirs here advocated. If this prestorage system of settlement were adopted there is no reason why, when the river water was specially unsatisfactory in quality, the good results obtained by simple sedimentation should not be considerably enhanced by the use of such coagulants as sulphate of alumina, alumino-ferric, etc.

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The storage of river water for purification purposes is a physical, chemical, mechanical, and biological problem of considerable complexity. The biological part of the process demands time for its proper fulfilment, and is a question of weeks rather than of days. The purely mechanical part also requires time, but is relatively rapid at the outset. Advantage should be taken of this circumstance to settle out the grosser impurities in small reservoirs interposed between the river and the storage reservoirs proper. This method of prestorage settlement ensures that the water passing into the storage reservoirs proper is of the quality best possible in the circumstances. The prestorage settlement method also permits of the occasional use of supplementary processes of water purification (for example, the use of coagulants).

Critical periods may arise in the future (as when floods succeed a period of long drought), when most impure river water must perforce be rushed through *depleted* storage reservoirs.

At such times, by the use of prestorage reservoirs and coagulants, the foulest river water could, apart from questions of cost, be rendered purer than the best water that ever flowed down the Thames.

Prestorage reservoirs are thus not only of advantage under ordinary, but also under extraordinary, conditions; with storage temporarily reduced to an almost negligible quantity, they could, with the aid of coagulants, be used to tide over any crisis that might ever arise short of the storage reservoirs being empty and the river so low as to render the abstraction of water a physical impossibility.

Yet, again, the adoption of a combined process of prestorage, settlement, and coagulation would, apart from questions of cost, enable the worst quality of flood water to be utilized, and so actually prevent the depletion of the storage reservoirs proper under any conditions save those of drought.

He adds that in a former report it was indicated that continuous flow settlement through small reservoirs capable of holding less than one day's flow had a decidedly beneficial effect in improving the quality of the river water.

Coagulants.

Dr. Houston states that the addition to the water of a coagulant (alumino-ferric) assists considerably in the work of purification.

Coagulants have for many years been most successfully used in this country in connexion with the purification of sewage, but their employment for waterworks purposes (apart from softening processes) is comparatively rare at home, although not uncommon in America and elsewhere. One reason for this is probably that our waters filter fairly easily, unlike many supplies in other countries, where the use of a coagulant may be a physical necessity owing to the presence in these waters of large quantities of very finely-divided suspended matter. Another reason is the rooted objection entertained by so many persons to the addition of chemicals of any sort to water, and no doubt the question of cost has also been a deterrent factor.

This aversion to the use of chemicals may be natural, but it needs to be remembered that the effluents from sewage works and manufacturing processes which drain into rivers above the "intakes" for waterworks purposes have frequently *already* been treated with chemicals. It may not be altogether desirable to compare chemicals taken for medicinal purposes with chemicals used as a means of purification; but the complaisant way in which people ingest the most nauseous and even potent drugs is somewhat surprising, in view of their intolerant attitude when any question arises of adding minute and harmless quantities of chemicals to water. Yet the amount initially added in the latter case may be infinitely small, the substance may be relatively (if not absolutely) innocuous *per se*, and the purification process may effectually remove even the last traces of it from the water. When the addition of a chemical to water does not appreciably alter its composition, or affect its taste, or produce any cumulative evil effects, or impair its potability generally, its use for *purification* purposes may not only be permissible, but actually desirable.

Such a substance is sulphate of alumina, and whether employed as a coagulant in connexion with mechanical filters or for ordinary purification purposes, its use is perfectly justifiable, and may indeed be necessary to obtain the best possible results.

He adds that there are a number of other precipitants which may safely be used to purify water—for example lime. Lime has the advantage of also softening the water, whereas alum increases the permanent hardness. On the other hand, alum is more efficacious in removing colour, and the precipitate produced settles much more quickly. The two are not infrequently used together. Lime treatment will be dealt with in his next report.

He concludes:

Taking the chemical and bacteriological results together, there can be no question that the beneficial effects observed in connexion with simple continuous flow settlement could be considerably enhanced by the use of coagulants.

Unfortunately the experiments were not carried out during the flood months of the year. Had it been otherwise, the results would in all probability have been much more striking from the point of view of percentage reduction, although doubtless it would have been necessary to increase the dose of coagulant.

In this brief abstract we have only attempted to give a general idea of the work of Dr. Houston and his staff. Besides the tables in the report, there are a number of addenda, in which the results of other experiments are given. The report is of the highest scientific and practical value, embodying as it does the results of a vast amount of painstaking research. In view of the terrible possibilities to the public health of a polluted water supply, Londoners have every reason to congratulate themselves on having so able and vigilant a guardian of the sources from which that supply is derived.

THE INTERNATIONAL TUBERCULOSIS CONGRESS AT ROME.

[FROM OUR SPECIAL CORRESPONDENT.]

THE tenth International Tuberculosis Congress, which was held in Rome from April 14th to 20th, was under the patronage of Their Majesties the King and Queen of Italy. The object of this Congress is to promote the scientific and social study of tuberculosis. Membership is open to all doctors and others interested in tuberculosis; the subscription is 25 francs for each member and 10 francs for every member of his family who may be present. After the Congress all members are entitled to receive copies of the official publications.

The work of the Congress is conducted in three sections: (1) Social measures against tuberculosis; (2) the medical and surgical pathology and therapeutics of tuberculosis; and (3) the etiology and epidemiology of tuberculosis. Reports are made to each section on subjects chosen by the Organizing Committee at the last Congress, and these are followed by communications from members on any aspect of the question chosen by them. In addition to the meetings of the sections, eight general conferences of the Congress were arranged to hear addresses by Landouzy (Paris) on the etiological importance of social factors in tuberculosis; by Kraus (Berlin) on the early diagnosis of tuberculosis; by Maragliano (Genoa) on the prophylactic vaccination of man against tuberculosis; by Webb (Colorado) on vaccination against tuberculosis; by Sahli (Berne) on tuberculin treatment; by Philip (Edinburgh) on tuberculization and detuberculization (published at page 873 of this issue); by Sanarelli (Bologna) on the biological evolution of tuberculosis in the human species; by Calmette (Lille).

Reporters in each section were allowed twenty minutes for their opening remarks, and five minutes in which to reply. Authors of communications were given fifteen minutes for their papers, and five minutes for replies. Those taking part in the general discussion were allowed ten minutes. The official languages of the Congress are Italian, French, German, and English.

Two criticisms may be made on the arrangements. On going over the list of papers an extraordinary amount of overlapping is apparent, and a great deal of repetition. At every congress we have those who read papers that every one has heard before, and with due solemnity announce the results of old investigations. It would be very much better if every paper read before the Congress were first submitted to a committee of experts. Every communication would then have the distinction which a paper read before an international meeting ought to confer, the audiences would be saved a good deal of inconsequential polemics, and the offending authors would find some inducement to cease from resting on their ten year oars. Again, sensational and premature pronouncements would be eliminated. It is deplorable that in the past international congresses have been made the medium of statements as to a cure for tuberculosis, couched in such terms that while the reservations were apparent to every scientist present, they yet received a wholesale acceptance in the lay press. The press rightly regards an international meeting as an event of considerable importance, and here in Rome, some days before the Congress opened, special correspondents from the great European journals were already present, prepared to telegraph every day. This makes it the more necessary that safeguards should be enforced, as it is often impossible to know what the title of an apparently innocent paper may cover.

The head quarters of the Congress is the Castle of St. Angelo, now flying the Italian flag bearing the double tuberculosis cross, surrounded by beautiful grounds gaily decorated with flags. At the Information Bureau four languages are spoken, and there are complete postal and telegraph arrangements. The largest hall, the Roman Salon in the grounds, available for sectional meetings accommodates 250 people, while the total number of those attending the Congress is estimated at 2,000.

The personnel of the Congress changes with its venue. Death has overtaken the great discoverer of the tubercle bacillus, who three years ago in Washington, holding tenaciously to his doctrine that the bovine bacillus was not lethal to man, signified his intention of being present in Rome. In the interval the British Royal Commission has proved that in a certain number of cases the bovine bacillus is the morbid agent of the disease in man, but on the other hand the vital finding of his work has found an almost universal acceptance—that the human consumptive is the main source of infection to his neighbours, and on this a great part of the social activity against tuberculosis is based. In this wise Koch is present in Rome. Of the British members of the well-known international group the absence through illness of Dr. Theodore Williams, who has hitherto represented the British National Association for the Prevention of Consumption at the Congress, and of Dr. Arthur Newsholme of the Local Government Board of England, is generally regretted on all sides.

INTERNATIONAL TUBERCULOSIS CONFERENCE.

The Congress was preceded by a meeting of the International Tuberculosis Conference from April 10th to 14th.

Human and Bovine Tuberculosis.

At the last conference in Washington the most debated subject was the question of bovine and human tuberculosis. Towards the end of a memorable discussion Koch proposed that further experiments be made and the results communicated to the conference in Rome. The statement made by Professor GOTTHOLD PANNWITZ, honorary secretary to the International Antituberculosis Association, as to Koch's position after the Washington Congress is therefore of considerable interest. On the voyage from America to Germany Professor Pannwitz drew up a statement which Koch approved. It is to the following effect: Koch took the same position then as he did in London in 1901—that bovine tuberculosis can be transmitted to men, but that it very rarely causes serious disease. Koch contended that pulmonary tuberculosis in man—the principal manifestation of the disease with which preventive medicine has to deal—was not caused by the bovine, but by the human bacillus. He therefore desired that all activities should be concentrated on this. He objected to the campaign against bovine tuberculosis, necessary in itself for economic and agricultural reasons, being associated with measures against human tuberculosis. He never objected to the measures ensuring the purity of milk and the products of milk, as milk is the medium through which many other infective diseases may be transmitted. He did object to these measures being placed in the foreground as having a bearing on the prevention of tuberculosis in man. Koch expressed his intention of undertaking further extensive investigations. He considered that investigations which aimed at proving the existence of bovine bacilli in human pulmonary tuberculosis should be undertaken with patients whose sputum could be examined over a considerable period of time. In his opinion the necessary investigations would be very laborious and expensive, and therefore could not be undertaken by small laboratories. In consequence the only results that might be considered of value would be those of the Imperial German Board of Health and the British Royal Commission.

There seems no doubt that this is to be accepted as Koch's final view on this question; but, quite apart from any misconceptions which may have arisen at Washington owing to the duality of languages spoken, there is most certainly a reservation in the above which was not apparent in Koch's pronouncement in London in 1901.

An important discussion took place on the second day of the conference on the relation of bovine tuberculosis to the human. Papers were read by Messrs. CALMETTE (Lille), KOSSEL (Heidelberg), SIMS WOODHEAD (Cambridge), NATHAN RAW (Liverpool), MOELLERS (Berlin), NEUFELD (Berlin), MALM (Christiania), and RABINOWITCH (Berlin).

Professor A. CALMETTE (Lille), having reviewed the recent work on this subject, maintained that the following points had been established:

1. That there was no morphological distinction whereby by staining we could differentiate the human from the bovine bacillus.

2. That culture methods give a useful indication as to whether the bacillus is bovine or human, but that their cultural characteristics are not sufficiently constant to enable a definite diagnosis to be made.

3. The inoculation of various animals, such as rabbits, goats, and especially bovines, is at once the best method and of general application. In most cases the human tubercle bacillus is unable to infect the rabbit, even if the

latter be inoculated with as much as 1 mg. of bacilli from a fresh culture; 50 mg. of bacilli from a similar culture will not generally induce tuberculosis in cattle. If the udder of the goat be inoculated with a culture of the human bacillus, there only results a local infection, which at most merely involves the neighbouring gland, whereas the bovine bacillus similarly inoculated will induce an extensive and lethal infection. If $\frac{1}{100}$ mg. of bovine bacilli be injected intravenously into the rabbit, the animal develops generalized tuberculosis in the course of four to eight weeks. There can be no question, therefore, that the bovine bacillus is more lethal than bacilli of the human type, when the latter is isolated from the sputum or from the lungs of a tuberculous subject. Guinea-pigs, cats, pigs, and most animals which suckle their young, are more sensitive to the bovine than to the human bacillus. The one exception is the monkey, which shows a maximum sensibility to both types of bacilli.

4. Experiments made with a view to raising the virulence of the human tubercle bacillus to such a degree that it is capable of inducing a general and lethal infection in the bovines have yielded uncertain results. Yet, according to Eber, it is possible for certain bacilli of the human type to adapt themselves to the bovine organism, and they then show all the characteristics of a very virulent bovine type.

5. In the early years of life human beings may be infected with bovine bacilli. At *post-mortem* examinations on children who die of generalized tuberculosis, it frequently happens that the bovine bacillus is found in the infected glands. According to W. Parker, it appears that from the ages of 0 to 5 the percentage of cases due to bovine infection in proportion to the total number of cases of tuberculosis is 26.5 per cent., at the ages of 5 to 16 it is 25 per cent., while above the age of 16 it does not exceed 1.31 per cent., as out of all fatal cases of tuberculosis above this age 98.69 per cent. appear to have been due to the human tubercle bacillus. In chronic cases of pulmonary tuberculosis this latter bacillus is practically alone present. It may be asked whether the rarity of the bovine bacillus in pulmonary tuberculosis is not due to the fact that the bovine bacillus implanted in the organism during the early years of life, without producing a pulmonary infection until after a lapse of many years, has not actually slowly adapted itself to the human organism, and is thus transformed into the human type. Such a hypothesis is supported by Eber's attempt to transform the human bacillus into one which showed the virulence and characteristics of the bovine type. Up to the present, however, there is no satisfactory solution to the question.

6. It is certainly an undeniable fact that in children from 0 to 16 years 75 per cent. of the cases of death from tuberculosis are due to the human bacillus, and in adults above 16 years of age 98.69 per cent. of fatal cases are due to the human bacillus. From the foregoing it is clear that for the prevention of tuberculosis we must prevent the infection of man by man and, above all, the infection of the family, this without neglecting measures to protect children against a possible infection from milk. He considered that the principal source of danger to human beings was that they should occupy the same room as a patient with open pulmonary tuberculosis, as this frequently results in massive infection to which the best protected organism almost always succumbs.

Professor H. KOSSEL (Heidelberg) said that if the type of bacillus in any given case of pulmonary tuberculosis be determined, it was then possible to fix the source of infection. Pulmonary tuberculosis in man was with very few exceptions due to infection by bacilli of the human type. The tuberculous patient was almost the only source of infection. The ingestion of bovine tubercle bacilli in the milk and meat of tuberculous animals played a subordinate part in the spread of the disease among human beings. The abolition of tuberculosis was only to be attained by measures which limit the spread of infection from man to man.

Professor G. SIMS WOODHEAD (Cambridge) summarized the reports of the work of the British Royal Commission on Tuberculosis appointed in 1901. In May, 1904, a first Interim Report was published in which it was stated that the disease as produced in bovines by certain strains of bovine tubercle bacilli was identical with that produced by certain strains of human tubercle bacilli. In 1907 the Second Interim Report states that a certain number of cases, especially among children, were due to infection with the bovine bacillus—of 60 cases examined, 14 were of bovine origin—and that a large percentage of cases due to ingestion of infective material were due to the bovine tubercle bacillus. The Commissioners urged more stringent regulations to prevent the sale of milk from clinically tuberculous cows.

The Third Interim Report went into the question of the infectivity of milk and faeces of naturally infected cows, as decided by Dr. F. Griffiths's experiments. It was already known that the milk of cows with tuberculosis of the udder was infective, but doubts were entertained as to whether the milk of tuberculous cows in which the disease could only be detected by the use of tuberculin presented any danger to the consumer. Six tuberculous cows were made the subject of experiment. After slaughtering, extremely careful search was made for any signs of tuberculosis of the udder, but in only one case (Cow F) were any such signs found, and in this case they were very slight. The milk of Cow F and of two other cows that showed clinical symptoms of tuberculosis during life contained tubercle bacilli whether the milk was taken in the ordinary way or with a sterilized catheter. In the case of the other three cows the disease could only be detected by the use of tuberculin; whither no tubercle bacilli were found in the milk, or they were found in such small numbers that they produced no typical tuberculous lesions when inoculated into guinea-pigs. The faeces of some animals was found to be infected though no bacilli could be found in the milk. This is important, as faeces not infrequently contaminate the udder and may get into the milk.

The Final Report was published in 1911 along with eleven volumes of experiments, carried on over a period of nine years.

Professor Sims Woodhead proceeded to give an account of these experiments in the isolation of tubercle bacilli from man and animals; the comparison of the cultural characteristics of the bacilli isolated and their pathogenic characters when introduced into various animals, and a comparison of lesions produced. Three main types of tubercle bacillus were met with—bovine, human, and avian. The bovine bacillus grows sparsely on glycerine; is acutely infective for the calf, rabbit, chimpanzee, Rhesus monkey, guinea-pig, goat, pig, cat; and is found in cases of human tuberculosis, chiefly in those due to infection by ingestion. The human tubercle bacillus grows luxuriantly on glycerine; is much more slightly virulent for the calf and rabbit. For the purposes of the Commission the avian tubercle bacillus was found to be of slight importance.

Professor Sims Woodhead also gave an account of the peculiar strains of bacilli isolated from cases of lupus in the human subject: some of these, in culture, resembled the "bovine bacillus," but were less virulent for certain animals, others resembled the "human bacillus" in culture, with a lower virulence for certain animals. Somewhat similar peculiarities were found in bacilli isolated from cases of tuberculosis of the horse.

Observations were made on the behaviour of the bacilli and their fate in the tissues of animals and on the lesions produced. The general results of these experiments showed that after ingestion the distribution in the organs of the body was much slower than after subcutaneous injection both in the case of the human and bovine types of bacilli. The inoculation of large doses, whether of human or bovine virus, might result in the excretion of tubercle bacilli in the milk of the cow and of the goat without any disease of the udder being produced.

Experiments directed to produce modification of the bovine and human types gave negative results. The only variation from the three main types occurred in cases of lupus and in the horse.

The human and bovine types of bacillus were morphologically indistinguishable, but differed in cultural and pathogenetic properties. The only cultural difference was that the human type grew more luxuriantly. In cases of fatal tuberculosis in the human subject, whether due to the human or bovine types, the clinical histories were alike and the lesions identical.

The peculiarities of the bacilli found in lupus were insufficient to establish the non-identity of the human and bovine tubercle bacillus. The Commission regarded these two types as variations of the same bacillus, and concluded

that mammals and man could be reciprocally infected with tuberculosis, that a considerable proportion of the tuberculosis affecting children was of bovine origin, the infection being transmitted to children in meals consisting largely of the milk of the cow.

One of the most important results obtained was that in at least 2 cases of pulmonary tuberculosis in which the patients ultimately succumbed to the disease, the tubercle bacillus known as the *Typus bovinus*, and this type alone, was found in the sputum during life. These observations were so carried out that they seemed to dispose of objections raised to the earlier findings of the Commission.

The following reports were submitted to the Conference:

Professor FRANCIS HARBITZ (Norway) gave the results of observations made at the Institute of Pathological Anatomy at Christiania. *Post-mortem* examination revealed the extraordinary frequency of tuberculosis in childhood, which frequency rapidly increased with age. The existence of tuberculosis in those cases in which there were no microscopic or macroscopic lesions was determined by inoculation of the guinea-pig. Autopsies on 484 children from 0 to 15 years revealed 198 (41 per cent.) cases of tuberculosis (including 119 cases which had died of tuberculosis (24.6 per cent.)), 52 cases (10.9 per cent.) of latent tuberculosis, and 27 cases (5.6 per cent.) in which the presence of tubercle bacilli was determined. In the first year of life 40 out of 161 cases, or 20 per cent., were found to be tuberculous. In the second and third year 25 out of 91 cases, or 27.5 per cent., were tuberculous, in the fourth and fifth year 15 out of 34 cases (44 per cent.), and in the sixth to the fifteenth year 118 of 158, or 75 per cent., were found to be infected. The later years of childhood therefore showed the greatest amount of infection.

By means of bouillon cultures and inoculation into rabbits and calves, Dr. Arent de Besche, Assistant at the Institute, investigated from 1909 to 1911 the cases of 134 children. Of these, tuberculosis was found in 52, or 39 per cent., of whom 28 had died of tuberculosis, 14 were cases of latent tuberculosis, and 10 were cases in which tubercle bacilli were found microscopically. Up to the present 46 pure cultures of tubercle bacilli have been obtained. In 41 instances these proved to be of the human type, 3 cases were due to the bovine bacillus, and 2 cases showed the bacilli to be of a mixed type. In the fatal cases of tuberculosis it was possible to trace the source of infection, which usually was the child's mother. On the other hand, in the cases of latent tuberculosis there was usually no source of infection to be discovered in the child's immediate surroundings. Professor Harbitz concluded with the statement that the chief source of infection in childhood is the human consumptive, and that the very great frequency of infection in childhood is of importance as being associated with the development of the disease in adult life.

Dr. ERNST AUG. LINDEMANN, of the Imperial Sanitary Office, Berlin, concluded that tubercle bacilli, compared to other bacteria, were very constant in their biological characteristics. In some cases long cultivation would produce a great reduction in virulence. From cases of lupus in man bacilli of very low virulence had been isolated. This virulence, however, could be increased by passage of the bacillus through bovines or the rabbit. Again, bovine bacilli of low virulence had been isolated from the horse. It had not been proved that tubercle bacilli of the human, bovine, or avian type could be transmuted one into the other.

Surgeon-Major Dr. MÖLLERS (Berlin) read a paper, in which he gave the results of investigations carried out in Koch's own laboratory, and partly during his lifetime. The sputum of 54 cases of pulmonary tuberculosis in man was investigated, and in every case the human tubercle bacillus was found. The literature of the subject contained the results of investigating the sputum of 700 patients. With three exceptions (two cases of the British Commissson and one case of Jong-Sturmann), all the bacilli present conformed to the human type. In one case Kossel found both bovine and human bacilli to be present. It was absolutely clear that, barring a few exceptional cases, pulmonary tuberculosis in man is due to the human tubercle bacillus. At Koch's Institute the bacillus had been examined since the last conference in 123 cases of all forms of tuberculosis, with the exception of lupus, as follows:

54 cases of pulmonary tuberculosis.
3 cases of tuberculosis of the bronchial glands.
8 cases of tuberculosis of the axillary glands.
3 cases of abdominal tuberculosis.
6 cases of miliary tuberculosis.
7 cases of uro-genital tuberculosis.
11 cases of tuberculosis of bones or joints.
9 cases of other forms of the disease.

With the exception of one case of tuberculosis verrucosa cutis, in which the bovine tubercle bacillus was found, every case yielded the human tubercle bacillus. Rothe had examined the bronchial and mesenteric glands in 100 children who died of various diseases before the age of 5. In 21 cases the presence of tubercle bacilli was proved by inoculation into the guinea-pig, and of these 20 were eventually found to be of the human type, and 1 of the bovine type. Of special interest were the investigations undertaken by Koch on lupus, on the supposition that this disease, continuing often for more than ten years, and showing little tendency to general infection of the system, might be due to bovine infection. Of 46 cases which came under observation, the investigation had now been completed in 28. Of these 28 cases, 23 were found to be due to the human tubercle bacillus, 4 to the bovine bacillus, while from one case both types were isolated. Dr. Möllers closed his statement with the remark that it was surprising that fewer cases of bovine infection had been found than by the members of the British Royal Commission, although in Germany a larger number of cases had been examined. He did not consider it likely that the population of Germany was less liable to bovine infection than that of other countries, considering the large amount of tuberculosis among the horned cattle of Germany.

There was some considerable division of opinion as to the exact part played by bovine tuberculosis as it affected man, and as a result it was decided to hold a special private meeting of the speakers in the above discussion, with a view, if possible, of arriving at some general working resolution. This meeting took place on April 12th. Professor CALMETTE was in the chair, and all the speakers were present. After considerable discussion, during which varying views were expressed as to the importance of bovine tuberculosis as a factor in the prophylaxis of tuberculosis, and the British representatives (WOODHEAD and NATHAN RAW) strongly urged the importance of the danger of bovine infection to man, it was finally agreed to adopt the following resolutions:

1. Prophylaxis of tuberculosis must principally be directed against the suppression of contamination from man to man and principally in the family.
2. The contamination of man by bovine infection is of less frequency; nevertheless, it is necessary to maintain all measures against infection of bovine origin.

These resolutions were adopted unanimously, and it is believed that as a result the stringent measures to eradicate tuberculosis from dairy cows will be continued.

Specific Treatment.

At the second general meeting of the Conference, held on April 11th, Professor PETRUSCHKY (Danzig) and Dr. HOLDHEIM (Berlin) submitted general statements in favour of the use of tuberculin without adding to what is already generally known.

Professor Dr. GRÄFIN VON LINDEN (Bonn) made a statement on Finkler's treatment in experimental tuberculosis of the guinea-pig by the injection of a substance belonging to the tar group combined with iodine and a copper salt. The substance *in vitro* hindered the growth of the tubercle bacillus, and in the body was deposited at the foci of disease, where hyperaemia was induced. If the substance were given within fourteen days of the inoculation of the guinea-pig, complete cure was claimed in 75 per cent. of cases. The body (called A) belonging to the coal-tar group did not cause fever. The substance B—a copper salt with iodine—might induce fever at the end of twenty-four hours.

Professor Dr. MEISSEN (Hohenhonnef) and Dr. A. STRAUS (Barmen) related the results of the use of this substance in the human tuberculous subject. As the former began the treatment ten months ago and the latter nine months ago, the results claimed cannot in any way be regarded as conclusive. Copper salts, iodine, and various bodies in the coal-tar group have all been tried before in tuberculosis

without any startling results. To the careful observer of tuberculosis perhaps one of the most difficult problems is to determine which therapeutic agent in any given case actually brought about an arrest of the disease. As we know that in a great many cases the disease appears to be arrested with very little interference on our part, every new or old specific must be received with due reservation.

Women and the Tuberculosis Campaign.

On April 12th the Conference received an account of the part which women have taken in this movement in Belgium, Germany, and France.

The World Movement against Tuberculosis.

On April 13th, at 10 a.m., the Conference received reports on the progress of the antituberculosis movement in the various countries represented at the Congress. All showed a growing activity and interest, but in general were rather the records of isolated enterprises than of a concerted scheme. The report of the British National Committee on the progress of the campaign against tuberculosis in Great Britain and Ireland was submitted by Dr. R. W. Philip. It stated that the diffusion of information through the efforts of the National Association to arouse popular interest, and institutional provision for patients had both steadily been extended. Six new sanatoriums had been opened, and four existing sanatoriums enlarged, so that in all 240 additional beds had been provided. There had been a remarkable development in the number of tuberculosis dispensaries, and in London two tuberculosis open-air schools were opened during the pst year. Compulsory notification was the feature of administrative achievement in England. The report proceeds to consider the subject of tuberculosis in relation to the Insurance Act. The Act was interpreted as providing, in addition to sanatoriums, hospitals of different kinds for the treatment of tuberculosis in all its different stages, and tuberculosis dispensaries which would serve as centres for receiving and dealing with large numbers in every district. The hope was expressed that under the Act a more or less uniform system of antituberculosis activity would be established throughout the United Kingdom with the tuberculosis dispensary as its centre, linked up closely with the sanatorium, the hospital for advanced cases, the tuberculosis school, and the farm colony, the whole being in close relationship to the medical officer of health.

The Welsh National Memorial to King Edward VII embodies a scheme for the prevention and eradication of tuberculosis. The memorial was about to be granted a Royal Charter so that all forms of tuberculosis might be dealt with on national lines. A sum of over £200,000 has been subscribed. It was intended to draw up a scheme for the treatment of all forms of tuberculosis, including dispensaries, sanatoriums for adults and children, hospitals for advanced and chronic cases, and open-air schools.

The report concluded with a statement of the work done in Ireland by the Women's National Health Association of Ireland, the principal event of last year being the opening of the first tuberculosis dispensary in Ireland by His Majesty the King. This was the P. F. Collier Memorial Dispensary in Dublin, which was modelled on the lines of the Royal Victoria Dispensary in Edinburgh. Unfortunately notification of tuberculosis was still merely permissive in Ireland, but it was stated that there were indications of a growth of public opinion, which might lead to the introduction of an amending Act, making the notification clauses of the present Act compulsory. The extension of the Labourers Act had resulted in marked improvement in the condition of housing both in town and country.

Social Arrangements.

On Saturday, April 13th, at 9 p.m., there was a reception to members in the Castle of St. Angelo. On Sunday, at 11 a.m., the Congress was formally opened in the hall "degli Orazi e Coriazi," in the presence of Their Majesties the King and Queen of Italy. On Monday the President, Professor Guido Baccelli, entertained the official delegates to a banquet. On Wednesday afternoon the lady members of Congress were entertained to afternoon tea by the Lycaeum. On Thursday afternoon the Municipality of Rome gives a reception to members at the Capitol. An excursion to Sangemini takes place on Saturday, and on Sunday, April 21st, *dies Natalis Romae*, there will be a reception at the Capitol at 9 p.m., when the Forum will be illuminated.

During the Congress members have free entry to the following: The International Exhibition of Hygiene, the Exhibition of Ancient Art, the Archaeological Exhibition, and to the newly completed memorial to Vittorio Emanuele II. Through special permission from the Ministry of Public Instruction members have free entry to all the national monuments in Rome, and in Turin, Genoa, Milan, Venice, Florence, Naples, Palermo, and Syracuse. Ladies attending the Congress have received cards of invitation to visit the monuments of Rome in company with the ladies of Rome. A daily journal of the Congress, containing the arrangements for the next day, is published each evening.

THE CREMATION SOCIETY OF ENGLAND.

On March 27th the Cremation Society of England held its annual meeting at 20, Hanover Square, Sir Charles Cameron, Bart., the President, being in the chair.

Report of Council.

The report of the council for 1911, the thirty-eighth year of the society's existence, was presented. It stated that during the year 114 cremations took place at Woking, as compared with 106 for the year 1910. There had been an increase in the number of cremations at Golder's Green, where 542 took place in 1911, as against 415 in 1910, being a growth of nearly 33 per cent. There was also an increase in the number carried out at other crematoriums in Great Britain. Stress was laid on the fact that there was no real difficulty in arranging for cremation, and that the forms and certificates required by the law could be filled up without causing serious trouble. The number of undertakers who were versed in the routine of cremation was daily increasing. The cost compared most favourably with that of burial. The council took the opportunity of again impressing on persons who desired cremation for themselves to make their wish known within the circle of those who might be called upon to provide for the disposal of their bodies after death. Inhumation often took place because it was not known in time that the deceased wished to be cremated. In a number of cases the body had been exhumed for cremation, a request to be cremated having subsequently been found amongst the papers of the deceased. Provision could be made during life with the society for cremation at death at any establishment in Great Britain. Since the alteration of the rules in 1907 admitting that course, a considerable growth had taken place in the membership of the scciety. During the past year it increased by 53, and included many persons of distinction. The Duke of Bedford, a vice-president of the society, having erected a new crematorium for the use of himself and family in the grounds at Golder's Green, had generously offered to give the society a crematorium built by his predecessor in connexion with the society's at Woking; the council had gratefully accepted this offer. The council viewed with much satisfaction the course taken by the Dean of Westminster in limiting his offer of interment in the Abbey to the cremated remains of Sir Joseph Hooker. In the list of those cremated during the past year the following names of well-known persons appeared: Sir W. S. Gilbert, Canon Robinson Duckworth, Mrs. Ramsay MacDonald, Walter Macbeth, R.A., General Goldsworthy, Lady Colin Campbell, Canon John Henry Coward, Sir Edwin Austin Abbey, R.A., Sir Charles Dilke, Bart., John MacWhirter, R.A., General Sir F. C. Stephenson, Constable of the Tower; Rev. H. C. Kelly, President of the Wesleyan Conference; Alberto Randegger, Mrs. Arthur Stannard (John Strange Winter), Rev. John Page Hopps, and the Earl of Cranbrook. H.M. the King was represented at two cremations, and the council thought it of interest to record that Canon Duckworth's ashes were deposited in the Abbey in an urn instead of an ordinary coffin. Those of Canon Coward were similarly deposited in St. Paul's Cathedral. The council gratefully

acknowledged the valuable assistance rendered by the newspaper press in placing the advantages of cremation before the public. Their special thanks were due to the BRITISH MEDICAL JOURNAL and the *Referee*. In response to an invitation by the British Executive Committee of the International Hygienic Exhibition held at Dresden in 1911, the society sent an exhibit including a statistical chart, examples of cinerary urns, and framed views, plans, etc., of crematoriums, for which they received an honorary diploma. The accounts and balance-sheet for the year ended December 31st, 1911, showed a satisfactory balance on the right side as the result of the year's working.

President's Address.

In his address Sir CHARLES CAMERON referred to the fact that the cremation movement in this country continued to advance, though its rate of progress was disappointingly slow. The combined figures for Golder's Green and Woking showed an increase of over 25 per cent. on the cremations of the previous year, and, taking Great Britain as a whole, the number of cremations in 1911, which for the first time exceeded 1,000, surpassed those of the previous year by close on 20 per cent. That increase in itself was encouraging enough; but when they found that in Germany the number of cremations in a month was not very far short of that in Great Britain in a year, and when they learnt that in that country in the month of February last the increase in the number of cremations over those in February, 1911, was nearly as great as they could boast of in this country in a whole year, it was obvious that in the matter of this method of disposing of the dead this country lagged lamentably behind Germany. As usual, the list of those cremated during the year showed an extraordinary preponderance of members of the wealthy and intellectual classes. That was at once apparent from the selection of well-known and distinguished names contained in the report. But the unfortunate thing was that notwithstanding its cheapness and the manifold advantages of cremation over burial—in the case especially of those who could not afford the luxury of a private grave—among the poorer and working classes to whom it should present the most obvious attractions, cremation in this country has as yet made no headway whatever. In the list of distinguished names contained in the report, however, was one of a lady whose work and name were most intimately and honourably connected with those very classes, and he trusted that the example afforded in her case might have some effect in breaking down the groundless prejudice against cremation of those to whose advancement she devoted her lifelong work. In the report reference was made, among other advantages which cremation afforded over burial, to the safeguards it provided against the concealment of crime. Now this was a point which it was important that he should elaborate in some detail on this occasion and for this reason: In a recent trial for murder counsel for the defence adduced as one of his arguments that if the accused had poisoned the deceased, instead of burying the body he would have had it cremated, and thus destroyed all traces of his crime. Sir Charles Cameron had no doubt that the argument was put forward in perfect good faith, but it showed an extraordinary ignorance on the part of the learned counsel as to the procedure legally necessary for the purpose of obtaining permits respectively to cremate or to bury. In the case of burial there was practically no precaution enacted for the detection of foul play. All that was necessary was to obtain from the registrar of deaths a burial certificate, and that might be obtained, and in thousands of cases was obtained, on application by a relative or other person without any medical certificate, or a certificate given by a medical man who had seen the deceased a few times—it might be a very few times while alive—and who had granted the certificate on the statement of a third person that his patient was dead without any verification of the fact by a personal inspection. This burial certificate should be delivered to the authorities of the cemetery before burial was permitted, but even that flimsy precaution appeared to be frequently ignored—according to the well-known writer whose identity was thinly concealed under the signature of "Dagonet" in the *Referee*. That writer said that two or three years ago he had on his study table 100 death certificates of people of all ages handed to him by a friendly undertaker at a time when he was writing on the subject, not one of which had been given up at the cemetery, so that 100 bodies had been put underground without even this formal legal requirement having been complied with. What would have been the course of events had the accused in the case to which reference had been made attempted to have the body cremated? He would have had in his own application form to have answered on oath a number of questions which if truthfully answered would have amounted to a confession of crime. On the hypothesis that the accused had committed a murder and that his object in applying for the cremation of his victim was to conceal his crime, it might be assumed that the answers given would have been untrue. But his application would have had to be accompanied by two medical certificates. In one the medical man would have had to testify not only that he had attended the deceased in the last illness, but that he had seen and identified the body after death. The doctor signing that certificate would have had to answer a long list of questions as to the duration of illness, the cause of death and its mode, to state whether he felt any doubt whatever as to the character of the disease or the cause of death, and to certify that there was no circumstance known to him which could give rise to any suspicion that the death was due wholly or in part to any other causes than disease or which made it desirable that the body should not be cremated. That certificate would have had to be backed up by a confirmatory certificate, which could only be given by a medical practitioner of five years' standing, who in addition must be the holder of one of some half dozen specified public appointments. He would have had to testify that he had examined the other certificate, and must answer various questions calculated to test the thoroughness of his examination, and further to testify as the other doctor had done that he knew of no circumstance calculated to give rise to any suspicion of foul play in the case. But even assuming that the accused had succeeded in securing these certificates, they would still have to go before the medical referee for an authority to cremate. In the particular case referred to, the cause of death was, he believed, said to be epidemic diarrhoea. In the form of medical certificate for cremation, it was required that when the cause of death was certified as arising from gastritis, peritonitis, or alcoholic poisoning, details of the attendant circumstances should be given in full, and when the cause of death was stated to have been gastritis or other similar diseases resulting in gastro-intestinal irritation, Mr. Herring, who acted as Medical Referee to the London Cremation Company, informed him that he made it a rule never to pass such a certificate without the most stringent inquiry or until a *post-mortem* examination had been made by an expert pathologist. He added that if, after examining all the papers, he was not absolutely satisfied, he either insisted upon a *post-mortem* examination as to the condition of authorizing cremation, or reported the case forthwith to the coroner and awaited his decision as to whether or not he considered an inquest necessary. Sir Charles Cameron concluded by saying he hoped they would agree with him that had a poisoner attempted to get rid of all proof of his crime by applying for the cremation of his victim's body, the chances were 100 to 1 that the real cause of death would be promptly brought to light, whereas in the case of his resorting to burial the chances were nearly as great that the crime would never be revealed. For general purposes the precautions might perhaps be a little overdone in the case of cremation; but the enactment of some elementary precaution for the detection of crime in connexion with their burial system was one of the clamant requirements of any scheme of social reform worthy of the name.

Dresden Hygiene Exhibition.

The following is a list of the exhibits sent by the Society to the International Hygiene Exhibition held at Dresden last year: (*a*) Enlarged chart showing the number of bodies cremated in Great Britain since the commencement of operations in 1885. (*b*) Photographs and drawings of the Golder's Green and Woking Crematoriums. (*c*) Examples of modern cinerary urns. (1) Urn of leadless glaze pottery ware; (2) and (3) caskets of cast and wrought

English bronze. (*d*) Specimen vase containing ashes—after incineration at Golder's Green. (*e*) Handbook "Cremation in Great Britain," and various publications of the Cremation Society of England.

LITERARY NOTES.

MR. STEPHEN PAGET has written a book summarizing in ten chapters the evidence given before the Royal Commission on Vivisection, as well as the Inspector's Report for 1910. The volume also contains in a final chapter a brief account of the Commission's Report, and an important Introduction by Lord Cromer, which contains a justification of his acceptance of the Presidency of the Society, a critical survey of the Report, and an earnest appeal for calm study of the facts disclosed. The book will be published by Mr. H. K. Lewis.

The next number of the *Edinburgh Review* will appear under the control of a new editor, Mr. Harold Cox. Mr. Cox is the seventh in succession to Francis Jeffrey, who held the reins from the foundation of the *Review* in 1802 down to 1829. The succeeding editors were Macvey Napier, William Empson, George Cornewall Lewis, Henry Reeve, and Arthur Elliot. The proprietors, Messrs. Longmans, Green, and Co., feel confident that in Mr. Cox they have secured an editor of whom it may be predicted that he will consistently maintain the principles which have been upheld by the *Edinburgh* for more than a century. The traditions of the *Edinburgh* have been to inculcate a sane and individualist liberalism; and under its new editor the *Review* will be as strongly opposed to democratic tyranny and democratic corruption as it was in the early years of the nineteenth century to the tyranny and corruption of an aristocracy. It will continue to defend the unity of the kingdom and to advocate those principles of personal liberty and personal responsibility from which liberalism should never be divorced. It will aim at promoting these causes by the dissemination of sound economic doctrine. Every endeavour will be made to maintain the reputation of the *Review* for fair-minded and tolerant criticism in literature and art, and in the future, as in the past, cordial welcome will always be given to new ideas and new movements for the advancement of the nation.

There are few sights more charming to the average adult than that of small children going through their parts in a well-organized school entertainment, and there are probably few children who do not enjoy these performances as a welcome break in the monotony of school life. Such spectacles, however, pretty as they undoubtedly are, and gratifying to parental pride, are by no means devoid of danger for the little performers. Miss S. G. Barnet, writing in the April number of *The Child*, unhesitatingly condemns them as "actually prejudicial to the welfare of our school children"; and the truth of this statement is proved by the ill-effects which, as the writer proceeds to point out, are too often the only lasting result of such displays. Children, says Miss Barnet, are nearly always overworked in preparing for school entertainments. Their ordinary school work cannot be neglected, and therefore the rehearsals have to take place out of school hours; and the strain and excitement, as well as the unavoidable fatigue caused by weeks of continuous training, produces a state of lowered vitality and nervous irritability which is anything but conducive to good health of mind or body. The deterioration in the physique of so many modern school children and the alarming increase of neurosis in childhood are both in many instances due to the fact that the already overwrought and overburdened child has been systematically deprived of his scanty play hours in order to satisfy his teacher's natural desire "to show off the school or to bring forward specially clever or promising children, or to get notices in the press, or by some means to loom large in the public eye." The need for proper and sufficient recreation for school children cannot be too strongly insisted upon, especially as there seems to be a growing conviction on the part of modern educationalists that school games and other organized amusements can take the place of that spontaneous, untrammelled play which is one of the most precious rights of childhood. Dr. Clive Riviere, who has contributed an interesting article on "Holidays" to the April number of *The Child*, also lays stress upon the necessity for plenty of rest for growing children, whose forces are usually strained almost to breaking point by the simultaneous development of their mental and physical powers. Holidays, says Dr. Riviere, ought to be periods of complete relaxation; and for this reason the usual habit of giving holiday tasks should be set aside, and the child allowed to amuse himself in his own way, and so recover from the effects of past fatigues and gain fresh strength to meet the demands of the coming term. In addition to the above-mentioned articles, the present number of *The Child* contains some valuable advice from Mr. J. S. Kellet Smith on the treatment of lateral curvature of the spine by means of suitable exercises, and a most interesting account by Miss Mary Dendy of the Sandlebridge Colony for Feeble-minded Children; whilst Dr. C. W. Hutt has written on the "Feeding of Necessitous School Children," and Mrs. E. Macrosty has contributed a short history of the "Baby Clinic" recently opened in North Kensington.

The March number of the *Journal of the Royal Army Medical Corps* contains an interesting account by Major H. A. L. Howell, R.A.M.C., of Richard Wiseman, Serjeant Surgeon to Charles II. Wiseman's origin, like that of Jeames, is "wrapped up in a mistry," and the date of his birth is unknown. Major Howell thinks it probable that he was born some time between 1621 and 1623. He was apprenticed to a surgeon named Richard Smith in 1637. It has been suggested that Smith was a naval surgeon, and, according to Major Howell, there appears to be little doubt that Wiseman's earlier years of practice, and perhaps of apprenticeship, were spent on board the ships of the Dutch Royal Navy; all the cases of wounds and injuries are described by Wiseman in his treatises as having occurred before he served in the army. He spent a long time in the Dutch service and was present at many sea fights. During the Civil War he appears to have joined the Royal Army about the end of 1643. In 1644 he was on active service in the field with the Royalist forces. He was in the surprise of the forts at Weymouth on February 9th, 1644–45, and was amongst those besieged in that town. Major Howell thinks he was probably surgeon to Colonel Ballard's regiment, as all the wounds described by him at this time were in men of that corps. He was with Goring in the attack on Melcombe Regis, and then went to the West of England, and was present at the siege of Truro and the fighting at Truro. Major Howell gives some extracts from his works relating to his experiences at this time. From these we select two as of special interest:

> At the siege of Melcomb Regis, a Foot-souldier of Lieutenant Colonell Ballard's, by the grazing of a Cannon-shot, had a great part of his Forehead carried off, and the Skull fractured into many pieces, and some of it driven with the Hairy scalp into the Brain. The man fell down as dead, but after a while moved; and an hour or two after, his Fellow-souldiers seeing him endeavour to rise, fetcht me to him. I pulled out the pieces of Bones and lacerated Flesh from amongst the Brain, in which they were intangled, and drest him up with soft folded Linen dipped in a Cephalick Balsam, and with Emplaster and Bandage bound him up, supposing I should never dress him any more. Yet he lived 17 days; and the 15 day walkt from that great Corner-fort over against Portland to the Bridge which separates Weymouth from Melcomb Regis, onely led by the hand by some one of his Fellow-souldiers. The second day after he fell into a *Spasmus*, and died, howling like a Dog; as most of those do who have been so wounded.

Again:

> At the Siege of Taunton one of Colonell Arundell's men, in storming the Works, was shot in the Face by Case-shot. He fell down, and in the Retreat was carried off among the dead, and laid into an empty house by the way, untill the next day; When in the morning early, the Colonell marching by that house heard a knocking within against the Door. Some of the Officers desiring to know what it was lookt in, and saw this man standing by the Door without Eye, Face, Nose or Mouth. The Col. sent to me (my Quarters being nearest) to dresse the man. I went, but was somewhat troubled where to begin. The Door consisted of two Hatches; the uppermost was open, and the man stood leaning upon the other part of the Door which was shut. His Face, with his Eyes, Nose, Mouth, and forepart of the Jaws, with the Chin, was shot away, and the remaining parts of them driven in. One part of the Jaw hung down by his Throat, and the other part pasht into it. I saw the Brain working out underneath the lacerated Scalp on both sides between his Ears and Brows. I could not see any advantage he could have by my Dressing. To have cut away the lacerated parts here had been to expose the Brain to the Air. But I helpt him to clear his throat, where was remaining the Root of his Tongue. He seemed to approve of my Endeavours, and implored my Help by the Signs

he made with his Hands. I askt him if he would drink, making a sign by the holding up a Finger. He presently did the like, and immediately after held up both his Hands, expressing his Thirst. A Souldier fetcht some Milk, and brought a little wooden Dish to pour some of it down his Throat; but part of it running on both sides, he reacht out his Hands to take the Dish. They gave it him full of Milk. He held the Root of his Tongue down with the one Hand, and with the other poured it down his Throat (carrying his Head backward) and so got down more than a quart. After that I bound his Wounds up. The dead were removed from thence to their Graves, and fresh Straw was fetcht for him to lie upon, with an old Blanket to cover him. It was in the Summer. There we left that deplorable creature to lodge; and while we continued there, which was about 6 or 7 days, he was drest by some of the Chirurgeons with a Fomentation made of Vulnerary Plants, with a little brandy-wine in it, and with Stupes of Tow dipt in our common Digestive.

When the Prince escaped to Jersey in April, 1646, Wiseman, to whom he was appointed surgeon, was among his suite. He appears to have continued in attendance on the Prince at Paris, and afterwards at The Hague. Wiseman was with Charles II when he lived in Scotland, and marched with the King's army into England. At the battle of Worcester he was taken prisoner and was sent to Chester. That ended his career as an army surgeon. At Chester he remained till the end of 1651, and worked among the wounded. In the early part of 1652 he obtained a pass to go to London. Soon afterwards he was admitted to the Company of Barber Surgeons, and, though still a prisoner under a special bail, he established himself "in the Old Bayley at the signe of the King's Head." His practice was naturally mainly among Royalists, and on a charge of being concerned in an attempt of a Royalist prisoner to escape, he was imprisoned in the Tower. After a time, through the influence of his friends, he obtained his release and resumed practice in London. Afterwards, probably owing to the troubles of the times, he took service as a surgeon in the Spanish Navy, in which he spent three years. He then returned to London, where he was living at the Restoration. Ten days after the King's return he was appointed "Surgeon in Ordinary for the Person." On the death of Humphrey Painter he was appointed Serjeant Surgeon. For several years before his death he was an invalid, suffering from lung trouble. It is, says Major Howell, to his gradual withdrawal from the active practice of his profession on account of ill health that we owe the production of his writings. In 1676 he died at Bath, whither he had gone in the hope of improving his health. He was twice married, but left no direct descendants. Towards the end of his life he was comfortably off. His fees as Court surgeon, together with a pension that had been bestowed on him, were equivalent to more than £1,000 a year at the present day. A patient whom he had cured of syphilis settled £30 a year on him during his own life. He was evidently a man of education, for his books are very well written; they are full of descriptive touches that make his reports of cases wonderfully living. He described himself without vain boasting as an "Artist in Chirurgy," for he was an operator at once bold and cautious. It should be recorded to his credit that in a drunken age he was a water drinker, and, though closely connected with a dissolute Court, he seems to have led a moral life.

SCIENCE NOTES.

IN a paper communicated to the Royal Society on the morphology of *Trypanosoma gambiense* (Dutton) Sir David Bruce has made a further contribution[1] to the knowledge of trypanosomes and sleeping sickness. He gives a summarized account of the chief morphological characters of the organism, and a plate showing the variations in form. He deals exclusively with strains from Uganda. Details are given of the measurements of one thousand specimens obtained from man, chimpanzees, monkeys, oxen, antelope, and rats. They show that the average length of the trypanosome is 22.1 μ with a range of 13 μ to 33 μ. The greatest average length was found in man, but the widest range in rats. The marked dimorphism is commented upon, and the absence of a free flagellum in the stumpy forms is noted. A comparison is made with *Trypanosoma brucei*, and it is shown that it is practically impossible to distinguish the two specimens on morphological characters. *T. gambiense* shows a larger percentage of stumpy, non-flagellated forms, but there is no evidence that this is a fundamental difference.

[1] *Proc. Roy. Soc.*, B. 84, 1911, p. 327-332.

It is irresistibly funny to think of a fish trying to look like a chessboard, yet this is what some of Mr. C. Tate Regan's experimental pets tried to do, and he told a remarkable tale of their behaviour at the Zoological Society's meeting last week. It is a matter of current knowledge that very many animals—perhaps, in fact, all animals to some extent—endeavour, voluntarily or otherwise, to imitate the character of their surroundings by appropriate colourings or markings. The tiger in the jungle, the stick insect, and a multitude of others are familiar instances of this phenomenon. In many cases, however, such as that of the tiger, the animal does not possess the power of altering his markings when the environment is changed. In other cases the animal appears to be able to change its markings not only voluntarily but very rapidly. Such is the case with the pleuronectid flat fishes, and it was about those that Mr. Regan made his remarks. The common flounder, the plaice, and others of this class all possess markings which harmonize with the ground on which they live, and which render them difficult to detect, as anyone who has looked into an aquarium where such fish are kept will readily admit. Mr. Regan first of all exhibited two photographs of fish lying on sand and gravel bottoms, and so close was the imitation that he had to be asked to delineate the contour of the fish in each case. The next photograph showed the result of the chessboard experiment. The fish was kept in a tank the bottom of which consisted of large black and white squares, and the fish undoubtedly made an obvious though not very successful attempt to give itself the appearance of a chessboard. When the size of the squares was considerably reduced the imitation was unquestionably more successful, and when, instead of squares the bottom consisted of small white discs on a black background, the imitative effort of the fish was indeed highly creditable. It may be mentioned that the fish experimented with was a species of Platophrys, a Mediterranean form bearing a close resemblance to the turbot.

CONGRESS ON INDUSTRIAL ACCIDENTS.

THE third International Medical Congress on Industrial Accidents is to be held in Düsseldorf from August 6th to 10th this year. Previous conferences have taken place at Liége (1905) and Rome (1909), and the published proceedings of these have provided much valuable information respecting this important modern branch of medicine and surgery. The questions to be submitted for discussion this year are exceedingly practical, and an international exchange of views should be of material assistance in concentrating and adding to our knowledge in this branch of study. They are as follows:

1. Comparative study of the Compensation Act in force in various countries.
2. Importance of early institution of functional treatment in cases of industrial accident.
3. Traumatic diseases of the heart and blood vessels.
4. Traumatism and arthritis deformans.
5. Productive and aggravating influence of trauma on cancer.

Although these subjects are purely medical and of particular interest to medical referees and medical officers of accident insurance companies, the membership of the Congress is not restricted to the profession, but is open to representatives of insurance companies and associations of employers or workpeople. Whilst it is hoped that a good number of British representatives will visit Düsseldorf, any one interested may become a member and thus secure a copy of the proceedings without actually attending the meetings.

Professor Liniger, Elisabeth Str. 63, Düsseldorf, is the General Secretary of the Congress, but the organization in this country is being undertaken by the Association of Certifying Factory Surgeons (Incorporated), the Secretary of which will be pleased to answer any inquiries addressed to him at 16, John Dalton Street, Manchester.

British Medical Journal.

SATURDAY, APRIL 20th, 1912.

ORGANIZE! ORGANIZE!

Disraeli, when a crisis in the fate of the party he led to victory was approaching, gave as the battle-cry to his followers the injunction, "Register! register!" The cry may be paraphrased in the existing crisis in medical affairs by the injunction, "Organize! organize!" The State Sickness Insurance Committee, in a memorandum to the Honorary Secretaries of Divisions and Branches in England, Wales, and Scotland about a month ago, strongly urged every Division to take steps to appoint forthwith for the area a provisional medical committee to safeguard the interests of the profession. Upon this advice many Divisions have already acted, and others are taking the necessary preliminary steps, but it is essential that every area in all the three countries should be organized as speedily as possible. The State Sickness Insurance Committee advised that medical men engaged in every class of practice in the area should be represented on the provisional medical committee, and, while urging that a strong effort should be made by a personal canvass to induce every member of the profession to join the British Medical Association, it recommended that members of the profession who still remained outside the organization of the Association should be invited to take their part in the work, and that the committees should at once get into communication with all practitioners at present engaged in contract practice. Another matter which has engaged the attention of the committee is the formation of a public medical service. This subject was first considered by the Association in 1906, and draft rules then prepared after long consideration, and repeated revision by the legal advisers of the Association, were issued to the Divisions in December, 1909, and published in the Supplement of the British Medical Journal of May 7th, 1910. The State Sickness Insurance Committee is to consider the matter further at its meeting this week, which takes place too late to render it possible for us to report its proceedings, but there can be little doubt that the immediate objective of the profession in all localities should be the organization of provisional medical committees, and the reference to them among other matters of the question of the lines upon which a public medical service can best be organized in each locality, in order that the profession throughout the country shall be in a position to meet the suspension of medical benefit should this be the outcome of the negotiations which may take place with the Insurance Commissioners after the draft regulations have been considered by them in conjunction with the Advisory Committee.

A report of the first meeting of the Scottish Medical Insurance Council, consisting of 58 direct representatives appointed by the medical practitioners in the insurance areas of Scotland, of the Scottish Committee of the British Medical Association, and of eight representatives of the medical faculties of the Scottish Universities and five of the Scottish Medical Corporations, is printed in the Supplement. It will be seen that it has been determined in Scotland that the insurance area shall be the unit for the purpose of organization, and that in each area a provisional medical committee shall be elected by the medical practitioners. To these provisional medical committees is entrusted the duty of organizing the profession in respect of each area. The Scottish Council has added a seventh principle, namely, that disciplinary power shall be vested in some properly constituted body, and it was decided that in the event of the seven cardinal principles not being incorporated in the regulations issued by the Commissioners the Executive Committee of the Scottish Medical Insurance Council shall at once take steps to establish a scheme, to be organized and carried on by the profession, for a public medical service adapted to the circumstances of the various areas in Scotland.

The reply (p. 917) of the Joint Committee of Insurance Commissioners to the letter addressed to it on April 12th in accordance with the instructions of the State Sickness Insurance Committee, does not carry us very far on the road towards firm ground for negotiation with the Insurance Commissioners, but it at any rate avoids the wrong turning which the Chairman of the Joint Committee seemed inclined to take when, in his answer to Sir Philip Magnus on March 20th, he told the House of Commons that he did not know that any reply, beyond a mere formal acknowledgement, would be sent to the Association's letter of February 29th, "because members of the British Medical Association are going to be appointed on the Advisory Committee, which will have to consider the whole question." This answer was too much on the lines of that made by the Chancellor of the Exchequer on December 4th, when he was asked whether the House of Commons might assume that the British Medical Association was satisfied with the provisions of the bill, and replied that while declining to express a definite opinion, he could at any rate point to the fact that the British Medical Association had allowed its Medical Secretary to accept the offer of a Commissionership.

From the terms of the brief reply received from the Joint Committee on April 15th, it seems that the Commissioners now clearly recognize that the duties of the medical members of the Advisory Committee do not go beyond giving the Commissioners advice and assistance in the preparation of the Regulations for the administration of medical benefit, and that it is now fully understood that the medical members have no authority to pledge the profession in any way. There is a statutory obligation on the Commissioners (Section 58) to accept the assistance of the Advisory Committee in making and altering Regulations, but the Commissioners may or may not act upon the advice so given. The medical members chosen by the British Medical Association will no doubt take care that members of the Association are fully informed as to the Regulations drafted by the Commissioners, and as to the advice tendered, and it will be for the Association as a whole, through its constitutional machinery, and after obtaining the opinions of the Divisions, to decide whether the Regulations effectively embody its demands. Should this not prove to be the case, any negotiations which might then be in order would be conducted not by the medical representa-

tives on the Advisory Committee, but by the British Medical Association, through the State Sickness Insurance Committee, acting under the instructions of the Representative Body, and with the co-operation of the Committee of Universities and Licensing Bodies in England, and the Scottish and Welsh Medical Insurance Councils. This must be clearly understood, and the letter of April 15th from the Joint Committee seems to show that its truth has been more or less completely grasped. Any attempt to steal a march upon the profession by representing to the public that the presence of elected medical members on the Advisory Committee is evidence that the profession is satisfied with the provisions of the Act as to medical benefit and with the actuarial estimates of the Treasury will be deeply resented and will seriously prejudice the position.

The first meeting of the Joint Advisory Committee—that is to say, the committee to advise the members of the Joint Committee of Commissioners for the three kingdoms—was to have been held on April 26th, under the chairmanship of Mr. Lloyd George, but has been postponed. When it meets, it will, as is understood, have before it certain draft regulations the preparation of which the Commissioners have regarded as urgent. As this Advisory Committee consists of some 150 persons, it is hardly likely that much business will be done at this first plenary meeting, and we understand that the intention is that the several classes of members, as indicated in the classified list published in the SUPPLEMENT last week, will subsequently meet as subcommittees for the consideration of the regulations especially affecting the several interests they represent.

THE FOUNDER OF GUY'S HOSPITAL MEDICAL SCHOOL.

SOON after the passage of the first Reform Bill an epidemic of commissions of one kind or another broke out through the land. So widely did it prevail that Sydney Smith said that if one was introduced to any stranger, the *onus probandi* that he was not a commissioner rested on the new acquaintance. A somewhat similar visitation is upon us now; it is one of the privileges—or penalties, for the matter may be looked at from different points of view—of living under a democratic dispensation. And the Commissions themselves have committees to advise them. These committees will naturally put forth blossoms in the shape of subcommittees, and it is possible that these too will need advisory committees to look after them.

The day of the despot, benevolent or otherwise, is over; at least, he is not known by that hated name. Yet, as there is an element of good even in things evil, the despot sometimes got things done. Had a Kaiser or a Bismarck or a Cromwell been available, we should have a living and teaching University of London, and many other things which have been smothered in infancy, overlain—or overlaid, if we would speak in the style of an Act of Parliament—by committees. What would become of an army in the field if commanded by a general with committees to left of him, committees to right of him, volleying and thundering? The task of Wellington in the Peninsula was made incalculably harder for him by the interference of the Government at home, and was further complicated by his relations with his Spanish and Portuguese allies. An interesting example of what can be done by a man who knows what he wants and sets himself resolutely to do it is afforded by the career of Benjamin Harrison, the founder of Guy's Hospital Medical School. He carried into practice Jowett's precept: "Don't argue; don't apologize. Get the thing done and let them howl." The story is told in Wilks and Bettany's *Biographical History of Guy's Hospital*. Harrison was elected treasurer at the age of 26; it should be mentioned that his father had reigned before him in the hospital in which the son had already lived twelve years. "He found many things needing reform. Cleaning had been neglected, lavatories were in a wretched state, the nurses were of a very inferior type. He set to work with vigour, and soon every department of the hospital felt the impress of his firm hand." In appreciation of his services the Governors, as early as 1808, had his portrait painted and placed in the panelling of the Court Room. To him the founding of the separate Medical School of Guy's is mainly due. Wilks and Bettany say: "However powerfully Sir Astley Cooper aided in this work, nothing could have been done, nothing was done, without Harrison's active initiative, participation, or consent. To have accomplished this so perfectly and so speedily proves him to have been a most able administrator, but he could not have performed so great a task unless he had had complete authority put into his hands. His was a kind of paternal government; he filled the various offices with persons whom he could trust, and took a lively interest in the welfare of each. Those who were not in his favour styled the government despotic and arbitrary, and he soon obtained the epithet of 'King' Harrison. The position he took may be seen in Cruikshank's caricatures, which adorn the walls of one of the rooms of the Medico-Chirurgical Society, where he is seen sitting on his throne and his subjects prostrating themselves in the most abject attitudes before him. He was supreme in everything, appointing not only the medical staff, but also the nurses and porters, and he supervised the purchase of all materials used in the hospital. His despotic sway continued until his retirement, and his power was absolute."

As might have been expected, Harrison's position as autocrat of the hospital was unfavourably regarded by many. In the Report of the Charity Commissioners who sat in 1837 there is the following statement: "He names the lecturers and exercises a sovereign and irresponsible authority in the distribution of the funds arising from the pupils' fees. So large a concession appears to us unjustifiable; not only is the great School of Medicine thus wholly delivered up to Mr. Harrison's discretion, but, the physicians and surgeons of the Hospital being practically elected from the lecturers in the School, their nomination is virtually surrendered to him." It is added, however, in justice to the Treasurer, "that his talents and energies have, for above forty years, been devoted to the service of the Hospital, and that the entire course of his administration has been marked by zeal the most active and efficient, as well as by the most scrupulous and disinterested integrity. Not only have his services been gratuitous, but his connexion with the Hospital—in the absence of a fund for the assistance of patients on their discharge—has proved to him a constant source of expense, numberless destitute persons having been relieved by his private benevolence. We are far from being prepared to show that the interests of the charity have as yet suffered under the above extraordinary delegation of authority to this gentleman; but a successor equally qualified and willing to make similar sacrifices with him is not likely to be found when it may become necessary." Harrison resented this inquiry most

strenuously, and was with great difficulty induced to give evidence. It was supposed by the public that abuses would be discovered, but none were made out. He retired from the treasurership in 1848, after more than fifty years' service, and died at Clapham on May 18th, 1856, in his 85th year. During his later years of office he acted very much under the influence of Gull, for whom he made offices without consulting anybody. Though he ruled despotically for fifty years, he was thoroughly supported by the Governors acting on the terms of Guy's will. The members of the medical staff were placed on the same footing as all other servants of the hospital, and could be arbitrarily dismissed at any time. The books of the hospital show how supreme the Treasurer was, and against his ruling there was no appeal. If there was any insubordination, he would bring the culprit before the Governors and sentence him.

To us in these days such a state of things is almost unthinkable. There are still, indeed, masterful chairmen of hospital boards, but they do not wield the sceptre of "King" Harrison. Medical men of the present day would not serve under a layman who arrogated to himself absolute authority in such matters as appointments to the staff. We do not believe in "men of destiny" or in autocracy of any kind, whether it be exercised over a hospital or an empire. But if the choice were to lie between an irresponsible treasurer who is at the same time a strong and honest man, and a fortuitous concourse of municipal atoms, the autocrat might prove the lesser evil.

ELDERLY PRIMIPARAE.

THERE is a very general belief that labour in a woman who bears her first child at an age more advanced than usual is apt to be difficult and dangerous to the mother. In the belief that the prevailing economic conditions militate against early marriage, and that therefore the number of elderly parturients is bound to increase, Dr. Kate Spain, of St. Louis, Missouri, has studied this question of elderly primiparae.[1] Dr. Spain has collected evidence from contemporary obstetricians tending to show that the outlook is much less unfavourable than current teaching would lead us to suppose.

An elderly primipara is, according to the statistical definition of most of these authorities, a woman who bears her first child between the ages of 30 and 45. The course of pregnancy differs little from that in young women. In Tarnier's clinic, a series of 111 women between the ages mentioned included only six in whom albuminuria was detected, and not a single instance of eclampsia. Hammerschlag found that eclampsia was only insignificantly higher in elderly primiparae than in primiparous women in general, who are more liable than multiparae to this complication. These observations are reassuring, since by the age of 30 most women have been exposed to several influences favouring renal disease and eclampsia from which young girls are more protected, hence on *a priori* grounds albuminuria and eclampsia might be expected to be a good deal more frequent. It appears that the elderly woman is specially prone to begin by bearing twins. Prinzing gives the percentage of twin labours in elderly primiparae as 4.14 per cent. The percentage is 2.96 in primiparae under 20, 3.54 in women from 20 to 25, and 3.90 in women from 25 to 30. Elderly primiparae are by no means so liable to protracted labour as is supposed. Uterine inertia seems more probable if the mother be weak or prematurely old, or if fibroids exist. Evidence about pelvic contraction is unconvincing. Edgar found 25 per cent. of pelvic deformities in 47 elderly primiparae, and high percentages have been noted in other records, but it seems probable some qualifying factor may have been left out of account; for example, women with such malformations are commonly picked out and sent to institutions where these statistics are made. Rigidity of the soft parts has been taken far too much for granted. The cervix is not necessarily rigid in elderly primiparae. Edgar (in his contribution to von Winckel's *Handbuch*) warns us, as Dr. Spain points out, against laying stress on rigid cervix in any individual elderly subject in labour. The rigidity is almost universally present in the primipara at any age, and also in the multipara in premature labours. In a weak elderly mother primary inertia may cause delay in overcoming resistance at the cervix, even when it is fairly soft. Rigidity of the perineum is more likely to end in its rupture than to cause a prolongation of labour. The weight of the child, it has been shown, increases proportionately to advancing age up till about 44 years; and Schroeder advances evidence that the great transverse diameter of the fetal head becomes disproportionately large when the age of the mother exceeds 35 years. That labour is often abnormal in elderly primiparae, so that instrumental aid is not rarely requisite, appears to be true. Tarnier resorted to the forceps in 27 per cent.; Sheviakoff, in Geneva, employed that instrument in 19.7 per cent. of his cases, whilst in addition he had 4 vaginal and 1 abdominal Caesarean section, 3 versions with extraction, and 1 embryotomy.

Evidence as to laceration of the perineum is obscured by the fact that obstetric operations involve great risk of these lesions. It is not clear that the perineum is specially liable to rupture in a spontaneous first labour after 30. Fetzer finds that prolapse of the genital organs is more probable the later in life the first delivery occurs. Febrile morbidity, according to Hesselberg, was observed in 14.1 per cent. in 200 primiparae over 30 in his clinic, a low percentage when we remember that obstetric operations are so often needed, It is, however, satisfactory to learn that *post-partum* haemorrhages are rare; Edgar and Courgenon rate that complication at only 8 or 9 per cent.

As for the child, it is oftener a boy than a girl—about 135 males to 100 girls, the general proportion in all women being 106 to 100; males are often stillborn, especially in primiparae. Fetal mortality was until recently very high; but recently, thanks to improvements in operative methods, it has fallen greatly—Edgar lost no child in his 47 cases; Courgenon had a fetal mortality of under 4 per cent. in 111. Thus the prevalence of twins is the only positive fact about elderly primiparae, and though certain complications are not infrequent labour need not be dreaded. No doubt, as the above statistics collected by optimists show, an elderly primipara may be exposed to certain complications, especially to inertia; but, in respect to inertia, many younger women suffer, whilst many women in the thirties are in the prime of their physical strength and endurance. Lastly, when we bear in mind that statistics like those here recorded were mostly drawn up in places to which cases are specially likely to be sent when complications are expected, it is reasonable to presume that numerous instances of normal labours in elderly primiparae in private practice are unrecorded.

[1] *Amer. Journ. Obstet.*, March, 1912, p. 421.

MEDICAL MEMBERS OF THE SCOTTISH ADVISORY COMMITTEE.

THE Scottish Board of Insurance Commissioners, being desirous of immediately appointing the Scottish Advisory Committee, has nominated as medical members the five Scottish representatives on the Joint Advisory Committee, namely, Dr. John Adams and Dr. J. Munro Moir, members nominated by the Divisions of the British Medical Association in Scotland, and Dr. McKenzie Johnston (Edinburgh)—these three gentlemen are members of the State Sickness Insurance Committee of the British Medical Association—Professor R. Stockman (Glasgow), and Dr. Norman Walker (Edinburgh), the direct representative of Scotland on the General Medical Council. The Commissioners have also invited Dr. R. C. Buist (Dundee), Deputy Chairman of the Representative Meetings of the British Medical Association, Dr. D. E. Dickson, a member of the Council of Fife Branch who has had special experience of colliery practice, Dr. G. R. Livingston (Dumfries), Honorary Secretary of the Border Counties Branch, and Dr. J. C. Moorhouse, Honorary Secretary of the Stirling Branch of the British Medical Association, to join the Scottish Advisory Committee.

TUBERCULOSIS AND THE INSURANCE ACT.

THE Special Committee on Tuberculosis appointed by the Treasury to advise as to the best methods of combating the disease in relation especially to sanatorium benefit under the Insurance Scheme will meet again on April 23rd, and will sit from day to day until it has completed the preparation of an interim report. "Sanatorium Benefit," it will be remembered, includes not only treatment in sanatoriums or other institutions but also treatment "otherwise," a provision which will allow the cost of treatment of tuberculosis at the patient's home, or at tuberculosis dispensaries, to be defrayed out of the fund for sanatorium benefit. The sums available for this purpose are annually 1s. 3d. in respect of each insured person out of the general fund, and 1d. in respect of each such insured person out of moneys provided by Parliament, and if these sums should prove insufficient the county council may sanction a larger expenditure. Further, there is the capital sum of a million and a half allotted under the Finance Act, 1911, for providing or making grants in aid of sanatoriums and other institutions. A local Insurance Committee will have the power, if it thinks fit, to extend sanatorium benefit to the dependents of insured persons out of the sums available for sanatorium benefit. Eventually sanatorium benefit may be extended by order of the Local Government Board, with the approval of the Treasury, to other diseases.

OCULAR TUBERCULOSIS.

OVER thirty years ago the late Professor V. Michel began his researches upon tuberculosis of the eye, and pointed out that it was far from uncommon. In this country Stephenson and Carpenter have done much pioneer work in this direction, but until quite recently it was hardly realized in England how very common ocular tuberculosis really is, and even now few of the recent textbooks accentuate the fact. Dr. Windbiel of Amsterdam, in a paper upon ocular tuberculosis and its treatment,[1] stated that although the disease is relatively frequent, yet until two or three years ago it was believed that the eye was immune to the tubercle bacillus. He states that in his clinic about one half of all the new cases were suffering from tuberculosis, most of the patients being children and adolescents. It must be clearly understood that by ocular tuberculosis is meant not only conditions such as florid tuberculosis of the iris, miliary tubercle of the choroid, or solitary massive tuberculous deposits in the choroid, in which there is a definite local infection with Koch's bacillus; there may be also a tuberculo-toxaemia of the eye manifesting itself as a "rheumatic" iritis, or as a phlyctenular conjunctivitis. The latter condition is probably almost always a sign of a tuberculous focus somewhere in the body. The large majority of patients presenting phlyctenular conjunctivitis and keratitis have glands in the neck, and give a family history of tuberculous affections. Nearly all give a general reaction, and many a local ocular reaction, to an injection, which may have to be repeated, of old tuberculin. Again, many of them can be cured by tuberculin therapy without any local treatment whatever. Verhoef believes that scleritis and episcleritis invariably have a tuberculous etiology, and it seems certain that a very large proportion at least of these cases are tuberculous, and can be greatly benefited by tuberculin therapy. It has been mentioned that the joint pains associated with many cases of so-called "rheumatic" iritis are in reality due to a subacute tuberculous arthritis, and it is known that phthisical patients who have developed anaphylaxis to tuberculin may react to an injection of tuberculin by pains in the joints. Beaumont and others deny the existence of rheumatic iritis, ascribing all the cases to gonococcal infection. The truth seems to be that true rheumatic iritis is rare, many cases so-called are septic, others gonococcal, and a certain proportion are due to tuberculo-toxaemia or true infection. It used to be supposed that interstitial keratitis was almost pathognomonic of congenital syphilis, but there is now evidence that only about 70 per cent. of the cases have this etiology, and that a large proportion of the remainder are tuberculous. A course of tuberculin skilfully applied is most efficacious in these cases, but knowledge, and above all patience, are necessary. The treatment must often be continued for at least a year.

[1] *Ophthalmology*, April, 1911.

ASEPTIC DIGESTION.

DURING the course of the last thirty years speculation has from time to time arisen as to whether bacteria in the intestinal tract are necessary for the complete functional activity of the digestive apparatus. The occurrence in the intestine of all animals of an enormous number and variety of micro-organisms has naturally given rise to the view that the latter must take some part in the process of digestion, and it has even been maintained by some that their presence is indispensable. Latterly, however, this opinion has been seriously challenged, and not a few experiments have been performed with the object of testing its validity. It has been, in consequence, shown that insects, particularly flies, can be successfully reared under absolutely bacteria-free conditions, although in some cases, it is true, the individuals were undersized and ill-developed. All doubts on the matter, however, may practically be set at rest by a recent communication to the Académie des Sciences (February 12th) by Dr. M. Cohendry. He has succeeded in rearing chickens under absolutely sterile conditions, and the birds showed no difference in development or in other respects from those reared in the ordinary way. Dr. Cohendry devised a special incubator and cage, to which were admitted only bacteria-free air, water, and food. Hen's eggs, after they had been carefully sterilized externally, were placed in this apparatus, and in due course were hatched. The chickens appeared to thrive in their unusual environment, and eventually became too big for their cage. By that time they were as large and as well nourished as other individuals of the same brood which had been reared in the ordinary way. On subjecting the experimental chickens to bacteriological examination it was found that the digestive tract, the blood, and the external surface of the body were quite sterile. As a further experiment, some of these chickens were fed on ordinary food, and in the course of a few hours their intestine was found to contain the usual bacterial flora, and no ill-effects followed the change. In a later series of experiments pure cultures of various organisms were administered to the sterile chickens and it was found

that streptococci seemed to exercise a favourable influence on growth, *Bacillus coli* had rather a retarding effect, while *B. subtilis* had a positively deleterious influence. From these experiments Dr. Cohendry concludes that the sterile chickens are not hypersensitive to intestinal bacteria, but that on the other hand, bacteria, non-pathogenic under ordinary circumstances, may exercise a pathogenic effect upon them. These experiments and conclusions have the endorsement of Professor Roux, which is probably a sufficient guarantee for their accuracy.

THE CULTIVATION OF THE LEPROSY BACILLUS.

CURRIE, CLEGG, and HOLLMANN, in their studies upon leprosy,* consider the question of the artificial cultivation of the bacillus of this disease. They conclude that by the method of Clegg it is frequently possible to grow an acid-fast bacillus morphologically similar to the leprosy bacillus in material from the tissues and organs of lepers, and that by heating, in the manner indicated by Clegg, a mixture of the cholera and amoeba symbiants and the multiplying acid fast organism, it is possible to isolate this acid-fast organism in pure culture. They conclude further that this acid-fast organism from lepers resembles in cultural peculiarities other members of this group, represented by *B. margarin*, *B. smegmae*, and the grass bacillus of Moeller, but that by serum tests it can be shown that a difference exists between the organisms the authors isolated and the three well-known bacilli mentioned. They hold that the only evidence yet adduced that the acid-fast organism isolated is *B. leprae* is the frequency with which these bacilli can be grown from leprous tissue, its morphology and acid-fastness, and the fact that it is neither *B. margarin*, *B. smegmae*, or the grass bacillus of Moeller, three common saprophytic acid-fast organisms. While they admit that the above data do not constitute scientific proof that the cultures are *B. leprae*, any more than it has been proved that the acid-fast bacillus found in lepromata is the bacillus of leprosy, nevertheless as the latter is no longer doubted, the authors feel that the bacillus grown by them will soon be, if it is not now, almost as well established.

"THROW PHYSIC TO THE DOGS."

WHEN Macbeth told his doctor to throw physic to the dogs he had some reason for saying so, as the man of art had just confessed that he could do nothing for his patient. When General Sheridan said he would follow the advice but for the fact that there were some valuable dogs about, he at least produced a new variant on the hoary-headed gibes at the expense of the profession. But how often do we hear of people who, apparently out of mere boastfulness, will not take the medicine ordered for them! If, as is often the case, they have not paid the doctor and have only a pious intention of doing so somewhere about the Greek Kalends, the jest may have some point, though it seems silly to seek advice which they do not mean to follow. Molière told Louis XIV that he gossiped with his physician, and that he did not take his medicine, and got well without it. But he may have taken his advice all the same. Montaigne, another of the great jesters at the art of healing, was a hypochondriac, and visited all manner of baths and so forth in search of health. Molière, at any rate, was a grateful patient, for he obtained a canon's stall for the son of his physician, Mauvillain, who is said to have given him technical help in his attacks on the faculty. There are many people, however, who will pay fees, get the prescriptions made up, and then scoff at the oracle and his counsel. This class is well represented by Turgueniev, who in one of his sketches of Russian life has drawn a picture of a compatriot whom he by accident found dying in a hotel at Dresden. He was consumptive, and the novelist took charge of him. The patient was very cheerful, and his chief amusement was playing tricks on his doctor, to whom he used to relate all sorts of complications of his disease, the offspring of his own fancy, which the worthy German always pretended to have foreseen and announced. After the doctor had left the patient would mimic him, and throw his medicines out of the window. More than once Turgueniev suggested that it would be well to call in a doctor of high professional standing while there was still time, and told the patient that he ought not to play the fool with his disease. But the sick man only replied with jokes at doctors in general, and his own in particular. He became a little serious towards the end, saying that, after all, it was hard to die, but, recovering himself, he said, "Listen, the doctor will come to-morrow, and he will find me gone to the other world. I can imagine his look!" And the dying man tried to imitate the stupefied expression on his physician's face. A few minutes later he died. We have only quoted this narrative, which is doubtless a product of the Russian novelist's fancy, because it illustrates to an exaggerated extent a type of patient with which every practitioner is well acquainted. The sense of humour varies in man, not only in degree but in kind; did not George Eliot say that a difference of taste in jokes placed a severe strain on friendship? We would not grudge a dying man any distraction he might find during the last few and evil days of his earthly pilgrimage. But surely if the doctor is paid—a large "if," indeed—he has the best of the joke. If a patient chooses to dispense with the last rites of medicine, why should he go through the costly farce of having a minister of healing to look on at his exit from the world? This is a form of scoffing at medicine which doctors cannot reasonably object to; if a patient throws physic to the dogs that is his affair. But to pay for advice that is not taken is a jest which may be a supersubtle enjoyment to some eccentric minds, but to most people it is as foolish as asking a solicitor to draw up a deed for the mere pleasure of destroying it. There are, however, in the journals devoted to the propagation of health fads many indications that this kind of joke has a special effect in "disoppilating the spleen" as the older physicians used to say. It is at any rate harmless, for it hurts no one but themselves.

SUICIDE AND THE JAPANESE CLIMATE.

IT is a commonplace of scientific thought in these days that environment plays a most important part in the life of the individual; but the opinion may also be hazarded that racial characteristics are also largely the result of climate and environment. The English habit of mind, for instance, with its marked common-sense tendency towards compromise in all situations where marked divergence of opinion exists, its willingness to accept things as they are and make the most of them, may, without straining theory too greatly, be attributed, partly at any rate, to the training through many generations induced by the known variability of our climate. The modern American owes a large proportion of his restless energy to the stimulating effect of the clear dry atmosphere of such large tracts of the country he has populated, and the known success of the Irishman in America has been attributed as much to the change from the enervating humid moistness of his native land as to the greater opportunities afforded to his energies in the new one of his choice. To the traveller who keeps his eyes open constant examples of the universality of this little-recognized law are continually occurring; and nowhere, perhaps, is this more strikingly seen than in the case of the Japanese Empire. The Japanese are probably the most written about and least understood people in the world to-day. The charm of their country at first sight is so intense, the surface

* Treasury Department—Public Health and Marine—Hospital Service of the United States. Public Health Bulletin No. 47, September, 1911. *Studies upon Leprosy: XIV. The Artificial Cultivation of the Bacillus of Leprosy. XV. Attempts at Specific Therapy and Leprosy.* By Donald H. Currie, Moses T. Clegg, and Harry T. Hollmann. Washington Government Printing Office. 1912.

gaiety of the people is so much in evidence, their habits and customs are so picturesque, that the passing sojourner, and much more the armchair traveller, may readily be forgiven if he acquires the usual prevailing impression that Japan is a country of sunlight, inhabited by a careless, laughter-loving people. It is only necessary to look below the surface for a moment, however, to see that this is not so—that, on the contrary, the Japanese are an essentially melancholy race. Europeans living in the country are fully cognizant of the fact, and, if evidence were necessary, it would suffice to point to the startling frequency of suicide among the Japanese. The scenery, too, is melancholy to a degree, the endless succession of serrated hills, clothed in funereal pines, producing on the mind, even of the passing traveller, a sense of solemnity and loneliness. Even amongst normal Europeans living in the country suicide is greatly in excess of that at home, and so fully has this been realized, particularly by American physicians practising in Japan, that they strongly advise that "melancholics" travelling for distraction of mind should not be encouraged to visit Japan, because the number of Americans who have committed suicide while travelling there in search of health has been so large. Putting aside the fact that Shintoism does not look upon suicide with the same abhorrence as Christianity, it is not surprising that in Japan suicide has been elevated almost into a cult. It is necessary only to read the story of the forty-seven Ronins and the account of the ceremony of hara-kiri preserved by Lord Redesdale to appreciate the attitude of mind prevalent amongst the mediaeval Japanese on this question. The yearly pilgrimages to the graves of these Ronins, who committed suicide after avenging the death of their overlord, the almost divine honour in which they are held, the wave of popular admiration which is now raising a statue to the memory of the station-master at Moji, who recently committed suicide by throwing himself before a train because the Emperor had been inconvenienced for half an hour owing to some mishap on the line, all tend to show that the modern Japanese have not wholly discarded the views of their mediaeval ancestors. Formal hara-kiri, it is true, is out of date; but the fact that over ten thousand suicides occur yearly in Japan, and that the President of the University of Kyushu has recently been compelled to resign owing to the pressure of public opinion, because he animadverted on the craze for spectacular self-destruction exhibited in the action of the Moji station-master, shows that the habit is deeply rooted in the nature of the people. This, coupled with the fact that Europeans also in Japan are more prone to self-destruction than at home, seems to suggest that the theory that the climate and the surroundings are the main predisposing factors towards an action which is repugnant, and rightly repugnant, to all the instincts of normal Western life.

THE ANTIVACCINATION LEAGUE.

THERE was the usual display of fireworks at the annual meeting of the Antivaccination League held recently in London. Mr. G. Bernard Shaw once more was responsible for the curtain raiser. His contribution was a letter, presumably addressed to the meeting, in his well-known style, but exhibiting him in the somewhat unfamiliar rôle of tender solicitude concerning "our rich classes." "As a means of terrifying our rich classes they ought to have a speech," said Mr. Shaw, "on the manner in which tourists are liable to be held up in ships on some of the more fashionable routes in Europe and America, and offered the alternative of revaccination or detention in a filthy and obviously dangerous quarantine camp if a case of small-pox or even a 'contact' is on board." The authorities who have to deal with the public health in places on the chief routes are fully alive to the danger of small-pox, and are not likely to tolerate filthy quarantine camps; nor are they likely to be terrorized into altering their vaccination regulations to oblige Mr. Shaw or "our rich classes." The story of the conversion of Dr. Hadwen gave the meeting another diversion. It is much on the same lines as other conversions. Briefly condensed from his reported remarks, it was somewhat as follows: He happened to see a child "covered with eruption from head to foot." The mother told him the eruption spread from the vaccination marks. Afterwards he looked at his own child in her cot and hesitated. Mother after mother told him the same tale. Then came a "strange coincidence." An antivaccination pamphlet was put into his hand just as he was getting out of a train. It bore the name of William Young. On perusing this, he informed his hearers, "I told my wife I would go up to London, see William Young, and take his advice." On the slender testimony of mothers and the writers of antivaccination pamphlets thousands besides Dr. Hadwen have shown similar credulity and become confirmed opponents to vaccination. Mr. Philip Snowden, M.P., moved the resolution to repeal the compulsory clauses of the Vaccination Acts. He candidly explained to the meeting that he had no qualification for his position there except that of the average man. Mr. A. W. Black, M.P., seconded; Mr. H. W. Chancellor, M.P., also spoke. Mr. Arnold Lupton, if present, is not reported to have said anything. The proceedings terminated with the usual votes of thanks to the officers.

THE WAITER'S NAPKIN.

IT is strange that people otherwise very particular as to how they eat and drink, as well as what they eat and drink, should submit to a number of unpleasant, not to say unsavoury, accompaniments when they partake of food in public places, which they would not tolerate in their own homes. It is certainly a remarkable tribute to the omnipotence of the waiter that such things should be Take for example that functionary's napkin, which is used for a variety of purposes other than to give the official brush up to one's plate which is so ceremoniously performed. We have seen this soiled piece of napery made use of by a waiter—in the intervals of serving his customers—quite impartially, whether it was to dust his trousers, or his boots, or even to wipe his perspiring forehead, and on more than one occasion to wipe his nose! A moment later he is perhaps rubbing the plate of a patron with this same napkin, which, when not being employed in any of the multifarious duties outlined above, is generally reposing in orthodox fashion in the armpit of a dusty and probably greasy evening coat. It is very little better to have one's soup handed to one after gently laving the visibly dirty thumb of the average waiter. True there have been sporadic attempts made to introduce the use of white cotton gloves, but the impossibility of keeping these for even a few hours in a state in any degree approaching their pristine purity is obvious. Whilst we need not allow our imaginations to run riot as to what may occur in the average hotel or restaurant kitchen, it is surely not too much to expect cleanliness in the actual serving of food. Certainly these and similar little unsavoury details are worthy of the attention of the public purveyors of food, for although for the most part people endure them uncomplainingly, for some of us undoubtedly they "clog the hungry edge of appetite."

SMALL-POX IN CANADA.

SMALL-POX, which in a mild form has been smouldering for over a year in many districts of Canada, is now flaring up in nearly all parts of the Dominion. It is not only assuming epidemic proportions but the type of case has grown more severe. In March there was epidemic prevalence in many localities from Ottawa to Quebec, and in one place

10 per cent. of the inhabitants contracted the disease; the lumber camps in Northern Ontario and Quebec were infected, there were cases in Alberta in February, and still further west, in British Columbia, twenty-two localities were infected. There has been, of course, almost total neglect of vaccination, and the Mayor of Toronto has taken this occasion to announce that he does not believe in vaccination. He has, perhaps, forgotten the historic epidemic in Montreal in 1885, familiar to most students of medicine through the account given of it by Sir William Osler, who knew all the circumstances well, in his textbook of medicine. For several years there had been no small-pox in the city, and a large unprotected population had grown up amongst the French Canadians, many of whom were opposed to vaccination. On February 28th a Pullman car conductor, who had travelled from Chicago, where the disease had been slightly prevalent, was admitted to the Hôtel Dieu, the civic small-pox hospital being at the time closed; he was not isolated, and on April 1st a servant in the hospital died of small-pox, whereupon the hospital authorities took the extraordinary course of dismissing all patients presenting no symptom of contagion who were not too ill to go home. "The disease," Sir William Osler says, "spread like fire in dry grass, and within nine months there died in the city of small-pox 3,164 persons." The occasion for the mayor's profession of want of faith was a reply to a letter received from a resident in Ottawa urging the Toronto City Council to co-operate with that of Ottawa in opposing the proposed amendment of the Vaccination Act. Incidentally we may say that further evidence of the failure in Ottawa to appreciate the gravity of the situation is afforded by the fact that an efficient inspector employed at a salary of 150 dollars a month was recently removed to make way for another willing to work for half the amount. It is true that the newcomer only retained the position for twenty-four hours and then resigned, but the incident does not seem to show a high standard of public spirit in Ottawa, and will not tend to encourage efficient medical inspection. The bill before the Ontario Legislature is designed to strengthen the law as to vaccination in certain respects, and in particular to remove the control of the vaccination of children of school age from the Board of Education and place it in the hands of the health authorities, to whom it properly belongs.

CHOLERA IN 1911.

A SKETCH map contained in the last monthly *Bulletin* of the International Office of Public Hygiene in Paris shows the prevalence of cholera in the Mediterranean basin and adjacent countries during 1911. In May the disease existed in epidemic form in three districts—two in Asia Minor, one near the southern Persian frontier, and another north of Erzeroum, extending as far as the southern shore of the Black Sea, and a third to the east of the Volga, in the lower part of its course. In June it had extended over a large area of country in Asia Minor, between Smyrna and the Sea of Marmora, as well as on the Persian frontier to the south of the districts infected in May. In July it had extended to both sides of the Volga as far as its mouth in the Caspian Sea, and to Sicily and the eastern parts of Southern Italy. In August the southern part of Sardinia was infected, as well as districts both in North Italy and on the eastern side of the southern part of the peninsula. It had also extended in Asia Minor to the whole of the southern shore of the Black Sea and of the Sea of Marmora and to the Aegean coast. In September Tunis and Tripoli had become infected as well as the northern part of Sardinia and several additional areas in the north of Italy. In August the disease had extended also throughout Macedonia as well as to the left bank of the Danube, from whence it spread to the right bank in September; the extent of country infected on the left bank increased during October, November, and December. The history of last year gives colour to the opinion which has been expressed by some authorities that the disease is again moving in an easterly and northerly direction, and it will be necessary for this country stringently to enforce the customary precautions during the approaching spring and summer.

A COLD CONGRESS.

THERE is a French Cold Association the members of which must have plenty to occupy them at the present time, when the Atlantic is strewn with icebergs, and the breezes blowing over them are "barbed" in a way that makes the morning tub a tribulation and an evening summons a trial to the flesh. The association is now organizing the second Congress on Cold, which is to be held at Toulouse in September (23rd, 24th, and 25th), under the presidency of the French Minister of Agriculture. The programme of the Section of Applications of Cold in Medicine (hygiene, laboratory, and therapeutics) is as follows: (1) Cryological (κρύος, cold) methods applied (*a*) in hospitals, (*b*) in medical faculties, (*c*) in morgues. (2) Applications in laboratory work: (*a*) Freezing of histological specimens; (*b*) the part played by cold in the preservation of serums; (*c*) the use of cold for the preparation of organic extracts; (*d*) the toxicity of serums, the influence of low temperatures; (*e*) preservation of vaccines by cryological methods; (*f*) the action of low temperatures on microbic cultures. (3) The uses of cold in therapeutics: (*a*) Application of solid carbonic acid in the treatment of skin disease; (*b*) treatment of leprosy by solid carbonic c l; (*c*) the action of cold on living animal tissues. (4) Applications to hygiene: Cold and the hygiene of dwelling houses.

INDUSTRIAL DISEASES.

THE Workmen's Compensation Act, 1906, contained in its third schedule a list of diseases—anthrax, ankylostomiasis, and poisoning by lead, mercury, phosphorus, and arsenic—and provided in respect of diseases in the schedule that if a certifying surgeon certified that a workman was suffering from one of them and thereby disabled from earning full wages, or was suspended from his usual employment on account of the disease, or died from it, and the disease was due to the nature of the employment in which the workman was employed, then he or his dependents would be entitled to compensation under the Act as if the disease or suspension were due to personal injury by accident. The Home Secretary has appointed a Departmental Committee to inquire and report whether the following diseases should be added to the third schedule—cow-pox, Dupuytren's contraction, and clonic spasm of the eyelids apart from nystagmus. The members of the committee are: Mr. Ellis Griffith, M.P., Parliamentary Under Secretary of State for the Home Department (Chairman); Sir T. Clifford Allbutt; Mr. A. H. Ruegg, K.C., County Court Judge, Staffordshire, and Joint Judge for Birmingham; and Dr. T. M. Legge, Medical Inspector of Factories. Mr. Alexander Maxwell, of the Home Office, is Secretary of the Committee, and to him all correspondence should be addressed.

THE Institute of Linguists, an association formed about eighteen months ago to promote a greater interest in the study of foreign languages, which has already held examinations under the direction of the University of London, will hold another on August 2nd and 3rd. It will be open to both men and women, and will be divided into two sections, commercial and literary. The standard of proficiency is high, and it is proposed to erect a properly equipped institute in London, and to establish a correspondence course in connexion with it. Further particulars can be obtained from the Honorary Treasurer, 120, London Wall, London, E.C.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Fifth Meeting.

THE fifth meeting of the State Sickness Insurance Committee was held on April 11th.

Mr. T. JENNER VERRALL was in the chair, and the members present were: *England:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. S. Hodgson (Salford), Miss M. H. Frances Ivens, M.S. (Liverpool), Dr. Constance E. Long (London), Mr. E. J. Domville (as Chairman of the Public Health Committee), Mr. James Neal (Birmingham), Dr. James Pearse (Trowbridge), Dr. F. M. Pope (Leicester), Dr. E. C. Price (Bangor), Dr. Lauriston E. Shaw (London), Dr. W. Johnston Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norwich), Dr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. D. J. Williams, F.R.C.S. (Llanelly), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. R. McKenzie Johnston (Edinburgh), Dr. J. Munro Moir (Inverness). *Ireland:* Dr. F. W. Kidd (Dublin). *Ex Officio:* Dr. J. A. Macdonald, Chairman of Council.

Apologies for absence for unavoidable reasons were received from Dr. E. J. Maclean, Chairman of Representative Meetings; Dr. E. Rayner, Treasurer; Dr. R. E. Howell (Middlesbrough), and Dr. Darling (Lurgan).

We are enabled to publish the following account of the proceedings in anticipation of the preparation and confirmation of the minutes:

NEGOTIATIONS WITH THE INSURANCE COMMISSIONERS.

The question whether any further action, and if so what, should be taken with respect to the letter forwarded to the Insurance Commissioners on February 29th, containing the minimum demands of the Association, was discussed. The receipt of this letter had been acknowledged.[1] The Chairman reported that no reply had as yet been received beyond this formal acknowledgement. In the course of the discussion the question was raised whether it was intended that the negotiations with the Insurance Commissioners should remain in the hands of the State Sickness Insurance Committee, or whether they were to be handed over to the medical members of the Advisory Committee. It was pointed out that the function of the Advisory Committee was merely to give the Insurance Commissioners advice and assistance in connexion with the making and altering of regulations under Act; the Advisory Committee could decide nothing, that duty falling to the Commissioners; and, further, the only body which had any mandate or authority to convey to the Commissioners the demands of the profession was the existing State Sickness Insurance Committee recently appointed by the Representative Body. Attention was directed to Mr. Masterman's reply in the House of Commons,[2] in which he had said that he did not know that any reply would be sent to the British Medical Association except an acknowledgement of the letter, because members of the Association were to be appointed on the Advisory Committee, which would have to consider the whole question. It was mentioned that the matter of medical benefit, including regulations as to medical attendance, treatment, and supply of drugs, and matters relating thereto, as well as the constitution of local Medical Committees, were matters to be settled by the Joint Committee of Insurance Commissioners acting in conjunction with the several national bodies of Commissioners. Eventually it was resolved *nemine contradicente:*

> That a communication now be made to the Commissioners requesting them to inform the Committee when a more detailed answer to the letter of February 29th last may be expected.

[1] BRITISH MEDICAL JOURNAL, March 9th, p. 571.
[2] Ibid., March 23rd, p. 697.

The following letter was in consequence forwarded to the Commissioners:

Letter to Joint Committee of National Health Insurance Commissioners.

April 12th, 1912.

Sir,

On February 29th last the State Sickness Insurance Committee of the British Medical Association forwarded a communication to the National Health Insurance Joint Committee, in which the minimum demands of the medical profession in relation to the National Insurance Act were stated. A formal acknowledgement only was received.

The Committee would now be glad to know when it may expect to receive a detailed reply to its letter.

I am, Sir,
Yours faithfully,
(Signed) ALFRED COX,
Acting Medical Secretary.

To this letter the following reply has been received:

Reply of Joint Committee of National Health Insurance Commissioners

National Health Insurance Joint Committee,
Buckingham Gate,
London, S.W.
15th April, 1912.

Sir,

I am directed by the National Health Insurance Joint Committee to acknowledge the receipt of your letter of the 12th instant and to state that all such representations as those of the British Medical Association conveyed in your letter of the 29th February will be carefully considered in connection with the preparation of the Regulations for the administration of Medical Benefit. The preparation of these Regulations is at present under the consideration of the Joint Committee, and it is hoped that it may be practicable at an early date to obtain, in that preparation, the advice and assistance of the Advisory Committee recently formed, to which as you are aware representatives of your Association have been appointed.

I am, Sir,
Your obedient Servant,
(Signed) W. J. BRAITHWAITE.

The Acting Medical Secretary,
British Medical Association,
Strand, W.C.

CONTINUANCE OF PRESENT CONTRACT MEDICAL APPOINTMENTS.

It was reported that several requests for advice as to the action which should be taken by the holders of contract medical appointments if asked either to make fresh contracts or to continue those at present in force, had been received. After discussion it was resolved to recommend medical practitioners receiving inquiries from friendly societies or kindred organizations as to the terms on which they would undertake fresh contracts for medical attendance on insured persons or their dependents, either under existing or new conditions, to reply that they are not at present at liberty to make any such arrangements and will be guided in their future action by the decisions of the British Medical Association. The following draft letter for use in such circumstances was adopted as a form which might suitably be followed:

> Sir,
>
> In answer to your inquiry as to the terms on which I would be willing to undertake the medical attendance on the....., I beg to state that I am unable at the present time to make any such arrangements pending the decision of the British Medical Association on the subject.

The Committee considered in consultation with the solicitor various questions arising with regard to the legal position of members of the medical profession now engaged in contract practice for clubs or friendly societies. The solicitor expressed the opinion that the mere fact of a friendly society or other similar organization becoming an approved society would not terminate the contract between it and the medical practitioner. He considered it essential that every medical man holding such a contract should at

once ascertain its exact terms in point of duration and otherwise, but he was not of opinion that the force of any such contract would be altered by the mere fact of the Act coming into force—that is to say, on July 15th next, as at present contemplated. Many such appointments terminated at the end of each year, being then subject to renewal, and such contracts would come to an end if not renewed. If the appointment were made for an indefinite period, and no notice was provided for any termination thereof, then unless such appointment was held subject to the pleasure of the court, lodge, or society, reasonable notice to determine it would be necessary; the length of notice which would be reasonable would depend upon the periods at which the emoluments were paid, and other incidental circumstances entering into each particular case. In the case of clubs held by yearly or half-yearly appointments—that is to say, definitely fixed for six or twelve months as the case may be—such appointment would terminate automatically at the expiration of such period without any notice whatever; in cases in which it was necessary to give notice, such notice might be given at any time unless the contract regulating terms of service provided otherwise.

Mode and Rate of Remuneration.

It was reported that two meetings of the Remuneration Subcommittee, consisting of Dr. James Pearse (Chairman), Dr. J. Adams, Dr. R. M. Beaton, Dr. S. Hodgson, Dr. D. F. Tolld, and Mr. Verrall, had been held, and that the Subcommittee had adopted certain recommendations, which were submitted to the Committee. Among these recommendations were:

Occupation Basis for Income Limit.

That the Committee, while not prepared to advise, for general acceptance throughout the kingdom, definite regulations providing for an occupation basis for the application of the income limit, sees no reason why an individual locality, in dealing with the question of income limit, should not take into consideration the question of classification by occupation with the Association income limit as a basis.

Right to Medical Benefit: Onus of Proof of Income.

That provision should be made in the Regulations for the following:

(*a*) That all or any of the following, namely, the medical practitioner, the insured person, the local Insurance Committee, or the local Medical Committee, shall have the right of challenging the title of any insured person to obtain medical benefit, in the form of medical attendance under any scheme administered by the Insurance Committee, on the ground that his income exceeds a limit fixed by the Insurance Committee.

(*b*) That the onus of proof that an insured person is entitled to medical benefit, in the form of medical attendance, should rest on the insured person.

(*c*) That in such cases the Insurance Committee shall require a signed statement from an insured person, showing his weekly wage, countersigned by his employer, and also showing his income from other sources, if any.

Payment per Attendance Fees.

The Subcommittee reported that it had considered the following Minute of the Special Representative Meeting of February, 1912:

That the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit.

The Committee had calculated that on this basis of 8s. 6d. as a minimum capitation fee the equivalent payments per attendance with a £2 income limit would be for ordinary domiciliary medical attendance on ordinary lives:

Ordinary attendance at surgery, 1s. 6d.
Ordinary visit at patient's house, 2s.

Payment for Extras.

The Committee accepted the recommendation of the Subcommittee that the Insurance Commissioners should be responsible for the payment of medical practitioners for extras, and not the individual insured person.

Obstetric Fees.—The Committee also accepted recommendations of the Subcommittee that, while ordinary confinement should be considered apart from the question of extras and come under a maternity case scale of fees, a miscarriage in an insured person should be held to be an extra; but that this point should be considered along with the question of fees for maternity cases at a subsequent meeting.

Other Extras.—The Committee also approved the recommendation of the Subcommittee that the following services should be extras, but postponed the consideration of the tariff of fees for such services as well as the consideration of other extras to a subsequent meeting:

Vaccination.
Fractures and dislocations.
Anaesthetics.

[As to this the Subcommittee recommended that the administration of a local anaesthetic be not considered as an extra, but that the administration of a general anaesthetic should be reckoned as an extra with a minimum fee of 10s. 6d.]

Night visits.

[The Subcommittee recommended that night visits (from 8 p.m. to 8 a.m., in response to calls received between those hours) should be extras.]

Organization of the Profession.

Public Medical Service.

It was reported that a meeting of the Insurance Organization Subcommittee had been held, at which the following were present: Dr. F. M. Pope (Chairman), Dr. John Brown, Dr. R. E. Howell, Dr. Constance Long, Dr. R. A. Lyster, and Dr. E. O. Price. The Subcommittee reported that it had had under consideration the model rules for a Public Medical Service issued by the Association in 1910,[1] as well as the scheme for a Public Medical Service of the Leicester and Rutland Division, and made the following recommendations:

(A) That the Committee is of opinion that each Division should be urged to set up a Public Medical Service in its own area.

(B) That the Divisions be informed that the Committee can suggest no better general basis for the formation of such services than the Model Public Medical Service Rules issued in December, 1909, by the Association, but recognizes that they require modification in some particulars, such as for example:

(i) The rules should be applicable either to the method of payment for work done or to that of payment per capita.

(ii) The times at which patients shall be allowed to change their doctor, and vice versa, shall be left for local decision.

(iii) The recognition of different subdivisions, which should be to a great extent autonomous, in such services as require them.

(C) That the Divisions be informed that the Model Rules are open to modification according to local circumstances, so long as the fundamental principles of the Association are observed, and that considerable latitude within these principles will be allowed by the Association in sanctioning the establishment of local schemes.

The Chairman of the Subcommittee stated that it had been found convenient in Leicester and Rutland to make the subdivisions mentioned (iii) correspond to Poor Law areas.

The Committee was informed by a member that the National Medical Union had in preparation a scheme based upon payment per attendance for the organization of a Public Medical Service under the control of the profession for use in the event of the Medical Benefit under the National Insurance Act being suspended, and added that he understood that the scheme would shortly be submitted for the consideration of the State Sickness Insurance Committee. In view of this statement, the further consideration of the recommendations of the Organization Subcommittee was postponed until the next meeting of the Committee.

New Form of Pledge.

The Committee considered, in consultation with the Solicitor, a new form of pledge which members of the profession should be invited to sign in amplification of the original undertaking of the Association, and the Chairman

[1] Published in the Supplement, May 7th, 1910, p. 205.

undertook to suggest to the Committee at its next meeting the procedure which might best be adopted to bring the pledge before the profession. It was understood that the new pledge would be addressed to provisional medical committees and no action taken upon it until, in the opinion of the State Sickness Insurance Committee, the time was ripe for the use of the pledges throughout the whole or certain parts of the kingdom.

NEXT MEETING.

It was arranged that the next meeting of the Committee should be held on Thursday, April 18th.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

National Insurance Act.

Nursing Associations.

MR. CHARLES BATHURST asked the Secretary to the Treasury whether, in view of the work of county nursing associations and other organizations providing out of voluntary resources district and village nurses and midwives, and of the fact that these were largely maintained by workmen's contributions which were likely to be partially or wholly withdrawn in the future, the Insurance Commissioners would instruct their lecturers to point out to the executive committees of approved societies the fairness and desirability of making contributions out of their funds to such organizations under Section 21 of the National Insurance Act.

Mr. Masterman replied that it was the duty of the official lecturers to explain Section 21 with the other provisions of Part I of the Act, but it would not be desirable that they should give such advice as was suggested on a matter which was left by the Act to the discretion of societies and insurance committees themselves. He would consider, however, if anything more could be done. He had no knowledge that any steps were being taken to dissolve these associations, and would be glad to have any facts brought before him.

Naval Surgeons.—Lord Charles Beresford asked how many applications had been received by the Admiralty from naval surgeons for accelerated promotion to staff surgeon under the regulations issued by the Admiralty on October 31st, 1903; how many of these applications had been granted; and how many applications it was the intention of the Admiralty to grant. Dr. Macnamara said that the reply to the first part of the question was 14, 11 of whom were found to be ineligible for various reasons. As regards the second part, two had been promoted and a third would be promoted next month. In reply to the third part of the question, each case would be dealt with on its merits, full consideration being given to the officer's record and his professional ability.

Railway Workers Killed and Injured.—The President of the Board of Trade informed Mr. Leach that during the year 1911, 106 passengers and 390 employees were killed and 2,725 passengers and 5,311 employees were injured in accidents to trains or the movement of railway vehicles on the railways of the United Kingdom. He had no information which would enable him to state the number of cases in which the injuries were permanent. There were a large number of other accidents on railway premises, but not connected with the movement of vehicles, and these were included in a return which was presented to Parliament on April 2nd, and would be issued in the course of the next few days.

Suffragettes and Forcible Feeding.—Mr. Lansbury asked the Home Secretary how many prisoners in prison for offences connected with the recent suffrage disturbances had been forcibly fed; how many were now being forcibly fed; and had any of the prisoners so fed been discharged, and for what reason. Mr. McKenna replied that twenty-five of these prisoners had attempted to starve themselves, and had had to be fed forcibly. Of these, five were at once reported for discharge on medical grounds, one suffering from heart disease, two from aortic disease, one from phthisis, and one from asthma. Three of the others had resumed the natural mode of feeding, seven took their food from a feeding cup, and ten had to be fed by tube in order to prevent them injuring themselves by voluntary starvation. Mr. Keir Hardie asked if it was a fact that certain of these women were not allowed to use the water taps during the time the strike was on. Mr. McKenna replied that that was not exactly the case. After inquiry, he was informed that milk was put into the cells of some of these women who declined to take their food in the ordinary way instead of water, but on their spilling the milk or otherwise getting rid of it, they were given free access to the taps, and they had had supplies of water. Mr. Keir Hardie then asked how long was the prohibition of water maintained. Mr. McKenna said there was no prohibition of the supplies of water. The hon. member had not given notice of this question, and he might say that the whole transaction occurred without his knowledge, but, as he understood it, what happened was that milk was put in the cells, and as soon as it was found that they would not take the milk they were given access to the water.

Feeble-minded Paupers.—Mr. Ormsby-Gore asked the President of the Local Government Board what was the number of feeble-minded persons in Poor Law union workhouses and the number of feeble-minded, including certified lunatics, maintained by Poor Law guardians in county and borough asylums; whether any return had been made in connexion with these persons since January 1st, 1906; and whether he would ask for a more up-to-date return from boards of guardians without delay. Mr. Burns answered that the total number of pauper lunatics or idiots on January 1st, 1912, in county and borough asylums, registered hospitals, and licensed houses was 96,883. The latest return of feeble-minded persons other than certified lunatics was obtained on January 1st, 1906, and related to persons under 60 years of age. According to that return the number of such persons in workhouses or other Poor Law establishments in England and Wales was 8,775. He did not think there would be any special advantage in obtaining another return of this character at the present time.

Vaccination in India.—Mr. Chancellor asked the Under Secretary for India if he was aware that, in the Triennial Report on Vaccination in the Central Provinces for 1908–11, it was stated that the supply of a pure lymph of standard strength could not be secured under the present system, and that there was risk of septic lymph being used; and whether, in view of these circumstances, and of the opposition of the Indian peoples to vaccination, he could see his way to abolish compulsory vaccination in those provinces. Mr. Montagu replied that the statement in question expressed the Chief Commissioner's conclusion that really pure lymph could be obtained, and risk of using septic lymph avoided by adopting in the Central Provinces the plan of a single central supply dépôt which had proved satisfactory in other provinces. He had instructed the Sanitary Commissioner to examine the matter further. The Secretary of State was not prepared to take the action suggested in the last part of the question.

THE Henry Saxon Snell Prize, consisting of fifty guineas and the silver medal of the Royal Sanitary Institute, is offered this year for an essay on suggestions for improvements in the ventilating, lighting, heating, and water supply appliances for an operating room and its accessory rooms for a general hospital of 400 beds (no students). Two competitors of different professions or crafts may join in sending in an essay and plans, which must be received by the Secretary of the Institute, 90, Buckingham Palace Road, S.W., on or before August 30th, 1912. Further particulars as to the points to which it is desired that attention should be particularly given can be obtained from the Secretary.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

WEST YORKSHIRE.

THE ANTHRAX INVESTIGATION BOARD.

THE sixth annual report of the Anthrax Investigation Board for Bradford and district states that during the six years the board has existed there have been 71 cases of anthrax, of which 24 died. Of the fatal cases, 15 were of the internal and 9 of the external type. Of the 8 fatal cases which occurred during the last year, in 1 only was medical advice promptly sought. Internal anthrax runs its course with so fatal a rapidity that, if recovery is to take place, early and prompt treatment is imperative. The symptoms may be altogether delusive, mere malaise being perhaps the prelude to death within twenty-four hours. The report speaks hopefully of Sclavo's serum. Of the cases which recovered, in 2 the good result is attributed to its intravenous injection, whilst in another, where the nostril was involved, 80 c.cm. of the serum were injected under the skin with good effect. In one of the cases of intravenous injection 80 c.cm. were used; in the other, three separate doses of 80 c.cm., 60 c.cm., and 40 c.cm. were given. This is in accordance with the recommendation of Professor Sclavo, who affirms that smaller doses than 60 to 80 c.cm. are useless. The board considers it proved that blood is the carrier of the anthrax spore; and "it appears increasingly probable that all danger of contracting anthrax would vanish in this district if blood clots could be permanently excluded from the raw material used." Dr. Eurich, the board's adviser and bacteriologist, to whom, doubtless, the interesting conclusions and facts contained in the report are due, shows that cases of anthrax arise in direct relation to those varieties of wool which show the most blood-stained samples. In a case of anthrax in a worker in Persian wool, it was reported that no blood-stained fibre was present in the material, but on a more rigorous search plenty of blood-stained material was found; in the remaining bales there were 99 samples of blood-stained wool, of which 10 were infected with anthrax spores. In one they were so numerous that "a case of anthrax would almost assuredly have occurred" during their manipulation. On the removal of the blood-contaminated portions the remainder of the wool was used, and no case of anthrax resulted. It is during the "carding" process, when the wool is torn apart by high-speed machinery, which shoots particles and short fibres into the air, that most cases of anthrax infection occur. As the washing and preparing processes do not disintegrate or open the blood-clots, like the carding machine, there is additional reason to regard the blood-clots as the carriers and source of the disease. It is suggested that receptacles for the blood-stained fibres should be provided, and be regularly emptied and cleansed, and that the workers should be trained, and encouraged to search for the dangerous material, by premiums paid to the sorters for its discovery and removal. No special danger appears to attach to the searchers who handle the blood-contaminated wool. The knowledge that danger exists leads to more careful handling; and during the last three years, since practical attempts to sort out blood-stained material began to be made, no case of anthrax has occurred among those who have engaged in the work, although the bacillus has been isolated from many of the samples cast out. Apparently it is not until the dried blood-clot is diffused by haphazard handling or disintegrating machinery, that risk arises. To assist the workers to recognize the blood-contaminated material Dr. Eurich has given seven demonstrations at the factories, and exhibits of blood-stained samples are to be placed in the public museums and factories of the district. Dr. Eurich considers that vigorous health is a factor in conferring immunity on the worker. No reliable germicide has been discovered. Cyllin, formic aldehyde, and Leach's fluid alter the outer layer of blood-clot and prevent penetration to the virulent spores in its interior. The Seymour Jones process, which is found effective in killing anthrax spores in the leather trade, is being tested. If it, or any other efficient method, can be adapted to the needs of the woollen industry, a great step will have been taken to wipe the blot of anthrax from the textile trade. The report is a record of honest, patient work, greatly to the credit of the board and its medical adviser, Dr. Eurich.

BRADFORD TUBERCULOSIS DISPENSARY.

In a previous issue of the JOURNAL (January 20th, 1912, p. 157) attention was drawn to the proposed formation of a tuberculosis dispensary in Bradford, and a hope was expressed that local medical practitioners should be engaged to carry out the scheme, and that a whole-time officer would not be appointed for this purpose. This suggestion has not been followed, for a whole-time officer has recently been appointed. It is a matter for regret that the Medical Officer of Health for Bradford does not endeavour to forward the views of his medical brethren more actively. In his report to the Health Committee of the Bradford Corporation he did not even suggest the appointment of local medical practitioners to do the work.

BRADFORD BABIES' WELCOMES.

The City Council of Bradford has determined to take over the work hitherto carried on voluntarily by the babies' welcomes, as mentioned in the JOURNAL for January 20th, 1912, p. 157. Here again the suggestion that the doctors who had generously done the work in the past should be asked to carry it on in the future, and be paid an honorarium for their services has been ignored. A lady doctor who is to devote her whole time to the duties has been appointed. The work connected with these welcomes is of the kind in which general practitioners are experienced, and it is difficult to understand why the Medical Officer of Health for Bradford did not recommend the paid continuance of their appointments. It is little less than a scandal that in the formation of new medical schemes of the character of those mentioned no endeavour has been made to obtain the views of the local profession on the projects. The Bradford Division has determined to address a letter of remonstrance to the local authorities on their extraordinary methods.

BRADFORD HOSPITALS.

At the annual meeting of the Bradford Royal Infirmary there was a sad lament that the difficulties in building the proposed new infirmary were of such a formidable character. The committee now suggests a modified design for a complete hospital with 260 beds, costing £180,000. But the Insurance Act has placed the voluntary hospitals in a position of so great uncertainty that it is difficult to obtain the requisite funds or to know precisely how best to act under the circumstances. However, as Dr. Campbell stated, the staff are of opinion that it is inevitable that some change must be made before long in the working conditions. The work will either have to be curtailed or a new infirmary will have to be built.

The report of the Bradford Children's Hospital showed a deficit on the year's working of £772. It stated that "the board felt that all voluntary hospitals were at the present time passing through a serious crisis, and that their very existence might be seriously threatened." The seconder of the adoption of the report took a very gloomy view of the Insurance Act as it would affect that and other children's hospitals.

As children were not provided for in the Act they would not receive any grants from the local committees, as the general hospitals might do. They would have to insure their staff, and as to probationers who had no salary the hospital would have the privilege of paying both the employers' and the employees' contributions. All hospitals would suffer in the matter of subscriptions and donations. He feared the curtailment of the usefulness of the institution, the closing of the wards, and, finally, the municipalization of the institutions, with the result to the public that they would have to pay rates, amounting to shillings in the pound in large towns, for the maintenance of hospitals, as well as contributing to the insurance fund.

HALIFAX ROYAL INFIRMARY.

The report of this institution shows that the number of persons treated during the year was 12,115. Of these 2,465 were in-patients. The expenditure exceeded the ordinary income by £474 18s. The board of this hospital, like that of most other similar institutions, noted the passing of the National Insurance Act with anxiety. It was thought likely to have a serious effect in reducing the contributions made by the subscribers and workpeople. One probable effect of the Act would be an increase in the number of persons coming for indoor treatment.

MANCHESTER AND DISTRICT.

NEW SANATORIUM OF THE SOUTH MANCHESTER GUARDIANS.

THE new sanatorium belonging to the South Manchester Board of Guardians at Abergele, North Wales, was formally opened by Mr. George Macfarlane, Chairman of the Board, on April 13th. As the building, which was originally a private residence, was comparatively modern, only slight alterations were needed to adapt it as a sanatorium, and with the consent of the Local Government Board it could be considerably enlarged if necessary at a relatively small cost. At present it is fitted up for 50 patients, and is pleasantly situated on a well-wooded hillside overlooking the sea. About 280 acres of land are connected with it, and there are several miles of footpaths with various gradients well suited for the exercise of the patients. There are also several bungalows which will be useful as shelters and residences. No advanced cases of consumption will be sent to the sanatorium, as the guardians have made other arrangements for these, so that the sanatorium will be used only for early cases of the disease which may derive benefit from sanatorium treatment. In fixing on the site the guardians met with strong local opposition and had to meet the cost of a Local Government Board inquiry. The opposition was carried to the extent that the Welsh members of Parliament met and agreed to petition the President of the Local Government Board against the guardians being allowed to purchase the property. On the guardians agreeing, however, to certain restrictions being placed on the patients, the sanction of the Local Government Board was given, and there is no probability that the neighbourhood will in any way suffer as a health resort from the presence of the sanatorium. The total cost of the property to the ratepayers is about £14,000, which is said to be less than half what the former owner spent on the buildings alone.

EXPLOSIONS IN COAL MINES.

A good deal of interest is still being taken in the suggestions of Dr. John Harger for the prevention of explosions in coal mines, and a full discussion took place on the subject at a meeting of the Manchester Geological and Mining Society on April 9th. As was reported in a recent issue, Dr. Harger's suggestions may be put briefly by saying that he proposes to reduce the amount of oxygen in the atmosphere of the mines from the normal 21 per cent. to 20 or 19.5 per cent., or in places where the risks of explosion are very great even to 17.5 per cent., and he would add at the same time about 0.5 per cent. of carbon dioxide. It is claimed that this would do away with the possibility of explosion from any cause, either from firedamp or from coal dust, whereas at present the system of ventilation used actually makes explosions more likely to occur in certain cases. Dr. Harger said that an atmosphere containing 17 per cent. of oxygen was ideal for a mine if it were not too expensive to make and maintain. Not only would coal-dust explosions be impossible in such an atmosphere, but fires of timber or coal or "gob-fires," even if they were started, could not spread or become dangerous, while the chances were very greatly against firedamp explosions being possible. For respiration, he said, 17.5 per cent. of oxygen was as good as 21 per cent., provided that not over 1 per cent. of carbon dioxide were present. Dr. Harger went so far as to claim that reduction of oxygen tension was a preventive and even a cure of consumption in miners. The problem of lighting the mine with such an atmosphere was solved by the use of the electric lamp, or, better and more safely, by the use of acetylene lamps, as it was found that acetylene continued to give a good light with only 12 per cent. oxygen, and did not go out until 9.5 per cent. was reached. The great advantage of the acetylene lamp was that it required about the same percentage of oxygen as a man did for respiration, so that as long as the lamp would burn the miner knew that the amount of oxygen was in safe proportion for breathing, provided there was no carbon monoxide present.

The President (Mr. G. B. Harrison, H.M.I.M.) said that he believed it could be shown that, but for the great improvement in ventilation of mines, there would have been far more loss of life from explosions. He believed that dust played a large part in many explosions which in former years were attributed to firedamp; some explosions which originated near the face of the coal were, beyond doubt, due to firedamp, and few mining men would agree that the ventilation on the faces was excessive.

Dr. J. Dickenson, former Chief Inspector of Mines in the district, agreed that more violent and more extended explosions occurred now than formerly, but it would take some time to persuade miners that improvement was to be effected by sending in impure air.

Dr. J. S. Haldane, in a letter read to the meeting, said that the air in a mine with 17.5 per cent. of oxygen would be similar in its action to that of a town at about 5,000 ft. above sea level where no one ever experienced any diminution in their working powers. The physiological effects of mine air now experienced when the oxygen was reduced to 17 per cent. by admixture with "black damp" were due not to the want of oxygen, but to the presence of 2 to 3 per cent. of carbon dioxide. The admixture of furnace gas for reducing the oxygen, which Dr. Harger had suggested, would entail great difficulties, as the gas would require thorough purification from smoke, suspended sulphuric acid, gaseous sulphurous acid, and most of the carbon dioxide, while the carbon monoxide would need to be consumed by some absolutely certain method that could never fail. Some of his experiments as to the explosibility of firedamp in an atmosphere with reduced amount of oxygen were not in accord with those of Dr. Harger, and he thought the experimental data were not yet sufficient to warrant any definite conclusions.

LONDON.

LONDON COUNTY COUNCIL.

Report by the School Medical Officer on Open-Air Schools.

THE school medical officer, Dr. Kerr, has reported to the London County Council as to the effect upon the children's health of the two open-air schools held in London last year.

Dr. Kerr stated that the Birley House School was opened at the beginning of April, 1911. During the first week the weather was exceptionally severe; the temperature during school hours was from 40° to 50° F., and at night on several occasions there were 2 to 3 degrees of frost. A north-easterly wind was accompanied by frequent showers of snow, which lay to the depth of several inches. The sunshine, however, was fair in amount. In spite of these inclement conditions the school was carried on as usual, the children taking refuge in a Doecker shed during the blizzards of snow. It was noteworthy that although the children attending the school were brought from homes where closeness of atmosphere and closed windows were the rule, none of them suffered any harm from this sudden change in hygiene. Several contracted ordinary colds in the head, but in no case was the school attendance interfered with on that account. The great heat of the summer, when for many weeks the shade temperature recorded on the average 80° F., was not ideal for the purposes of the school, and accounted for the somewhat poor increase in weights noticed during the period. The intense heat had a somewhat enervating effect, and it was found necessary to curtail the amount of physical exercise and dancing. Following on this period there were three months of wet, windy, and unsettled weather, and the typical London fog had on occasions to be reckoned with, but there was never any need to bring the children indoors. On very wet days the classes were held in the Doecker shed, which had been considerably improved by the addition of removable side windows. These could be fitted so as to close in to a great extent the open side of the shed, whilst leaving a gap sufficient for the admission of a plentiful supply of fresh air, and keeping out the wind and rain. This device was the result of the ingenuity of the head master. During this abnormally wet period there had been no ill-effects from exposure, and the attendance had not been adversely affected. A notable innovation had been that children coming to school with the soles of their boots worn through were supplied with clogs to wear during school hours, thus ensuring that their feet were kept dry.

On admission the children presented a miserable and uncared-for appearance, and as the weather was cold

and windy, and many of them were suffering from common colds, it would be difficult to imagine a more wretched looking class. They came from very poor districts, and most of them were badly clothed and dirty. They were badly nourished and anaemic, and had bad teeth. A majority were suffering from lung conditions, such as fibroid changes, collapse, and bronchiectasis, all the result of repeated and neglected attacks of bronchial catarrh in the past. There were several with a family history of phthisis, and some had been treated previously elsewhere for phthisis. Judging from physical signs alone there were two children who might be considered to be suffering from phthisis, but not in an active state. Several children had enlarged cervical glands, and there was one case of tuberculous elbow-joint. As to the more common ailments, there were on admission: Enlarged tonsils, 3 cases; adenoids, 2 cases; other defects of throat and nose, 2 cases; defective vision, 12 cases; teeth requiring treatment, 52 cases (about three-fourths of all the children); discharging ears, 6 cases. Efforts were made to obtain treatment for all these children at the earliest possible date. The chief difficulty was the apathy of the parents, with whom, as the children came from parts scattered over South London, it was not easy to get in touch. The throat and ear conditions had all been remedied; the vision had also been attended to and glasses obtained in almost all cases. The children were taken for dental treatment in batches, but there were still thirty-one who required further treatment. Some of these cases were marked "urgent."

Dr. Kerr included in his report a number of tables showing that, as regards both height and weight, the children at the open-air schools on admission were considerably below the average of London County Council school children generally. During the thirty-six weeks of attendance at the school the children gained in these respects more rapidly than the standard child, and this was especially marked during the last ten weeks of cooler weather. For the purpose of comparison, the haemoglobin of 120 children (55 boys and 65 girls) was estimated at the ordinary medical inspection at three schools of good average type, the children's ages ranging from 3 to 13 years. The result of this examination, and of observations on the state of nutrition are expressed in the following tables:

HAEMOGLOBIN.

Schools of Average Type.

	Boys.	Girls.
Haemoglobin average	Per Cent. 87.8	Per Cent. 88.9
Haemoglobin Averages at Birley House, 1911.		
At opening of school	81.0	81.4
At end of 26 weeks	86.1	86.5
At end of 36 weeks	87.7	88.0

As the average percentage of haemoglobin had reached almost to the average of ordinary London County Council school children, a continued improvement might be looked for. Of the 38 boys, the percentages of 24 showed an increase at the thirty-sixth week, 6 were stationary, and 8 had decreased. Of the 37 girls, the percentages of 22 showed an increase, 10 were stationary, and 5 had decreased. The abnormal hot weather appeared to account for the fall in some cases; in others it was attributable to teeth extractions or other operations. Bad home circumstances in some cases were at the root of the want of improvement.

STATE OF NUTRITION.

Expressed as Grams Weight per Centimetre at the Various Ages.

Boys.			Girls.		
Age Last Birthday.	On Admission.	At 36th Week.	Age Last Birthday.	On Admission.	At 36th Week.
9	193.0	209.8	9	185.4	191.8
10	203.1	207.6	10	181.0	200.1
11	203.8	226.1	11	193.4	201.0
12	209.9	227.1	12	225.8	220.7
13	221.0	254.9	13	207.1	249.4

The number of children at each age was relatively small, but still the round increase was remarkable.

The chest expansion of the boys on admission was 1.9 in., and at the end of the period 2 in.; and of the girls, on admission 1.8 in., and at end of the period 2.4 in. It must be remembered that a majority of the children on admission were suffering from lung conditions.

As to the beneficial results to the children from attending the school, the brightness and general contentment of the children, as compared with their former apathy and often sullen resentment towards the open-air life, left little doubt that the experience was of great educational value for them.

Experience at the Shooter's Hill school had shown again that the more unhealthy and debilitated a child was at entrance, and the more room there was for improvement, the greater the rate of return to health. The method of admission, based as it was on the general impression of unhealthiness as well as on the presence of definite disease, meant the selection of children who were generally very anaemic; 73 per cent. of the admissions showed by the haemoglobinometer test only 75 per cent. of normal, but by the end of the school period only 2 per cent. were below normal. Probably the majority of the children were tuberculous in the widest sense of the term, but only 14 were definitely assigned to this heading. Of these, 5 were cases of pulmonary tuberculosis; they increased in weight, were less anaemic, and gained in appearance of general health, but the lung condition did not improve, except in one case, in which no traces of active lung disease could be detected when the school was closed. These cases could scarcely be expected to improve materially whilst they returned for the greater part of their time to the environment of the home from which the disease had originated. In cases of asthma the attacks seemed just as frequent during their attendance at the open-air school as previously. The great function of the open-air school appeared to be its stimulating effect upon the merely debilitated child in that it became happier and more interested in its work, preferred the open-air school to the classroom from which it had been drafted. Return to the open-air school was return to more natural conditions of living.

SOUTH WALES AND MONMOUTHSHIRE.

KING EDWARD VII HOSPITAL, CARDIFF.

AT the meeting of the board of management on April 10th Colonel Bruce Vaughan, referring to the City Memorial to King Edward, said that the fund had now reached £25,000, or £3,000 more than they had asked for. Of this the Lord Mayor had collected £1,100 under very difficult circumstances. A second sum of £500 had been received from Miss Talbot, of Margam, and the proceeds of the last infirmary ball were £380. Miss Talbot, in sending her donation, had expressed a wish that the whole of the beds in the new wing might be opened shortly, so as to reduce the number of those waiting admission, which stands at present at 963. Referring to the National Insurance Act, Colonel Vaughan made an appeal to the public to keep up and increase subscriptions, seeing that no provision for hospital cases was made in the Act. He also referred to the need for completing the medical school, a great step towards which would shortly be made by the opening of the pathological block. A discussion took place on the deferred question of instituting a staff of private nurses. The Joint Committee had reported in favour of the proposal. Dr. Herbert Vachell said that the Medical Board did not approve of the scheme, on the grounds of risk of infection and for other reasons. Dr. Wallace was in favour of it, and Colonel Vaughan strongly supported it. He believed that if a proper nurses' home were established the hospital would benefit by £500 or £600 additional income. The board eventually decided to form a private nursing staff. Mr. Andrew Brown brought up the question of the milk supply. He said that though the percentage of fats, etc., was very good, the institution had no safeguards as to the contamination of the supply by organisms. The milk came from numerous sources and from long distances, and he was in favour of the board taking steps to have every cow examined by veterinary surgeons. The

general feeling of the committee was that, though very desirable, it was not at present practicable to have control over all the milk from the farms to the institution.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MEDICAL INSPECTION OF SCHOOL CHILDREN.

THE first annual report of the school medical officers for the county of Inverness has just been issued. The medical officer of health for the county, Dr. John MacDonald, is chief medical inspector; but the county is divided into two areas—the mainland, inspected by Dr. Gordon A. Lang, and the islands, by Dr. Fletcher. Dr. Lang reports that he paid 156 visits for purposes of medical inspection, while for other purposes 21 calls were made—in all 177. This involved travelling over 3,179 miles. The total number of children examined was 3,856, of whom 2,009 were boys and 1,828 girls. In reviewing the facts disclosed by medical inspection, Dr. Lang states that very few cases of poor nutrition were met with, notwithstanding the very bad condition of so many of the children's teeth. The figures are distinctly below the average: Boys 0.64 per cent., and girls 0.9 per cent. Dr. Lang states that there can be little doubt that the almost universal use of porridge has much to do with this remarkable result. The mentally defective boys formed 2.1 per cent., and girls 1.6 per cent. Regarding cleanliness, Dr. Lang remarks that so much has been written and said about the dirt and proneness to contagious skin diseases of the Highlander that it was expected that the figures under this heading would be high. It was found that the opposite was the case. Inspection showed that only 1.5 per cent. of the boys had verminous heads, the girls somewhat higher, 2.28 per cent.; and only 1.6 per cent. of the boys and 1.2 per cent. of the girls had verminous bodies. Defects of speech were found in 2.8 per cent. of the boys, and 1.8 per cent. of the girls. Dr. Lang found two out of every three boys, and a larger proportion of girls, had bad teeth; this was found in town and country, in the wildest glen as well as in the flat country along the sea. Dr. Lang makes some pertinent remarks regarding the food of the children in the Highlands. He says:

> One is sorry to see everywhere in the Highlands that the housewife is giving up baking at home, and buys from the baker's van and cart. The good old-fashioned oat-cake, bannock, a crusty loaf made out of coarse meal, is neither eaten nor wanted now, but a fine flour is used to make bread that contains no silica to form the essential enamel that covers all good teeth. It is common to see sets of teeth with no enamel at all upon them. Soft puddings are common, and every second mouthful, when the child is at home, is washed down with tea. This is the age of soft food and too much tea.

The percentage of children with at least two bad teeth was 64.7 in boys, and 69.4 in girls. Very few cases of skin disease were found.

Tuberculous disease was present in 46 cases; only 4 were cases of phthisis, the majority being tuberculous disease of glands.

Eyesight was not so good as would have been expected; the usual form of defective vision is short sight, no less than 70 cases were noted.

Appended to Dr. Lang's report on the medical inspection of the children are remarks on the feeding of the children, tinker children, and the hygienic condition of the schools; the recommendations contained in his report are carefully thought out, and we hope that the various educational authorities in the county will give it an intelligent perusal. Dr. Fletcher had possibly the more arduous task in inspecting the children of the island district of the county of Inverness. He paid about 200 visits to schools and examined 4,042 children (2,139 boys and 1,903 girls). He makes much the same remarks as Dr. Lang does as to the cleanliness and the defective teeth of the children in the islands. The percentages of most of the other defects found were somewhat similar to those found by Dr. Lang. Appended to the report is a memorandum by the chief medical officer, Dr. MacDonald, on school closure, which contains much useful information on this subject; he also deals with the question of medical certificates in connexion with schools and infectious diseases.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE NATIONAL INSURANCE ACT

A DEPUTATION from the committee of the Dublin hospitals had an interview recently with the Irish Insurance Commissioners to explain how the Act would affect the hospitals. Following the lines of the appeal recently published by the committee, it was explained that there would probably be a large falling off in the subscriptions from the general public, and therefore a decrease in the number of patients. Dr. Henry Jellett, Master of the Rotunda Hospital, showed that the Act as it at present stands is a grave manace to the maternity schools in Dublin. At present between 3,000 and 4,000 maternity cases are treated in the Dublin hospitals, and about the same number of cases are attended in their own homes by the students and pupil nurses of the maternities. As the maternity benefit is only to be paid to women who remain at home and are attended by a qualified doctor or a certified midwife, this will probably prevent a large proportion of the 7,000 women from seeking the aid of the maternities. He therefore urged the Commissioners to make it clear to the women affected that if they entered a hospital the benefit would be paid to their dependants, and that attendance in their own homes by a student or pupil nurse under the direct supervision of the hospital would be recognized as equivalent to attendance by a qualified practitioner. There was some discussion also regarding the insurance of hospital employees and nurses. The Commissioners promised to take the various points into consideration, and to discuss them again with the deputation. Meantime the committee has circularized the hospitals, asking if they are in favour of a capitation fee to be paid for each insured person who is admitted to hospital, and if so, what should be paid for each day the patient remained in hospital; also asking the number of in-patients daily in the hospital, and the proportion of those who would be likely to be insured persons under the Act.

ROTUNDA HOSPITAL AND THE INSURANCE ACT.

At the meeting of the Board of Governors of the Rotunda Hospital last week a report from the Master on the effect which the Insurance Act will have upon the hospital was read, and it was decided to send a copy to each of the members of the board and to call a special meeting at an early date to consider it. In his report Dr. Jellett said the Act would affect the hospital in three ways: (1) By causing a reduction in the amount of the subscriptions, though he did not think it likely that the Rotunda Hospital would lose as much as the general hospitals. (2) By causing additional expenditure, in consequence of having to insure both servants and staff, and possibly the probationer nurses; this extra expense might be to a large extent avoided if the Commissioners would consider nurses in hospitals as coming under the head of inmates in charitable institutions, and if probationer nurses were included under the head of apprentices who do not receive money payment. (3) By penalizing all patients admitted to the intern maternity department of the hospital, or attended in the extern maternity department, since it would mean a loss of 30s. to every uninsured woman the wife of an insured man, of £3 to every woman who was herself insured. His report went on to state the suggestions he had made to the Insurance Commissioners for meeting this latter difficulty.

TRINITY COLLEGE MEDICAL SCHOOL BICENTENARY CELEBRATIONS.

As already mentioned, the bicentenary celebrations of the Trinity College Medical School will take place in the first week of June. The Royal Colleges of Physicians and Surgeons in Ireland are both actively co-operating with Trinity College. Circulars have been sent out to all medical graduates of Trinity College whose addresses could be found, and invitations have been sent to about 300 learned bodies both at home and abroad, many of whom have accepted. Dr. T. P. C. Kirkpatrick has written a history of the medical school, which will be published before the celebrations.

The Royal Victoria Hospital, Belfast.

At the annual meeting of the Royal Victoria Hospital, Belfast, on March 27th, the Lord Mayor (Mr. R. J. McMordie, M.P.) occupied the chair, and it was reported that although the work had in no way decreased, the annual income had exceeded the expenditure by £343; this was due to an increase in the subscriptions from workpeople and in the Hospital Saturday collection; and the debit balance of £2,103 had been reduced by the amount. The cost per bed was £63 1s. 5d.

The medical and surgical report was read by Dr. R. J. Johnstone, Honorary Secretary of the medical staff. The beds had been kept fully occupied now for a number of years and the number of patients varied within narrow limits; 1,576 operations were performed with a mortality of 2.1 per cent. Nearly 900 radiograms were taken, and equal activity characterized all departments. Ten years ago 13s. 7½d. was spent for the use of alcoholic liquors on every occupied bed for the year; in 1911 the sum was 3s. 10½d.

The Vaccination Question in Belfast.

An endeavour has been made to induce the Belfast Board of Guardians to desist from compulsory vaccination. At a recent meeting of the board a deputation of medical men, consisting of Sir William Whitla, Dr. McKisack, Dr. J. R. Davison, and Dr. R. J. Johnstone, waited on the board, and once more put before it the unanswerable statistics in a clear and certain light. Dr. R. Thomson, Chairman of the Public Health Committee; Dr. Bailie, the Medical Superintendent Officer of Health for Belfast; and Dr. Robb, the board's own officer, also attended, and the latter gave the figures of the last epidemic. The Chairman thanked the deputation, which was sent conjointly by the Ulster Medical Society and the Belfast Division, for putting their views before the guardians. At the same meeting a letter was read from the Local Government Board, which pointed out the risk to the infant population of any slackness on the part of the guardians, and to the serious danger to public health. The chance of conveying disease by pure lymph was infinitesimal, and the protection afforded by efficient vaccination was fully recognized. The matter was postponed for discussion.

Salaries of Union Medical Officers.

The Gort Board of Guardians decided at their last meeting, by 18 votes to 3, to adopt a graduated scale of salaries applicable to the medical officers of the union, increasing their salaries to a maximum of £200 per annum, to be reached in twenty-four years by triennial increments of £7 10s. each.

Scene in a Hospital.

An extraordinary scene in the Corofin Union Workhouse was described in evidence given at an inquest held in Ennis last week on an old woman of 86, who had been in the hospital for some time, and who died as the result of injuries received from another female inmate who was also a patient in the hospital. The night nurse described what happened when she was on duty on the night of March 31st. The deceased woman was in a ward with five other women. About 3 a.m. one of the women sat up and began to threaten the deceased; she was pacified for the time, but soon afterwards sprang out of bed and, seizing a chair, rushed over to the bed of the deceased. The nurse tried to take the chair from her, but was unable to do so. In answer to the nurse's screams for help two men came from the infirmary, and the nurse ran for help to the main house. On her return she found the patient still in a violent state, striding up and down the ward with the chair, with which she struck the deceased and another woman. One of the men then rushed in, and they with difficulty removed the chair and got the frenzied woman back to bed. It was found that all the women in the ward were bleeding from blows they had received. The medical officer gave evidence that the woman was a chronic epileptic, and had been an inmate for several years. The jury exonerated the night nurse from all blame.

Proposed Formation of an Irish Goat Society.

The formation of a Goat Society in Ireland is at present under consideration by the Women's National Health Association. There are in Ireland a very large number of goats; but, as their breeding and management are greatly neglected, they yield only a small quantity of milk for a short period. There can be no doubt that if the Irish goat were improved and cared for it would to a great extent meet the want that is felt by labourers and other persons of small means of a milk supply. The object of the proposed society is to stimulate a wider interest in the subject, and more particularly to improve the milking qualities of the existing breed by selection, improved management, and a judicious crossing with foreign breeds yielding a large quantity of milk for a lengthy period.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Famine in Bombay.

His Excellency the Governor of Bombay presided at a meeting convened by the Sheriff in connexion with the Bombay Central Famine Relief Fund, and in the course of a lengthy speech explained what had been done by Government and charitable agencies. The total number of persons employed on Government works on March 9th was 51,387, and of this number 40,752 in the Panch Mahals were employed on regular relief works. On the same date the total number of persons on Government gratuitous relief was 46,223, including 3,323 dependants and village servants. The Central Fund needed further assistance in the work it had undertaken of relieving those persons who were reluctant to accept Government help. Resolutions were passed approving the method of relief adopted by the committee and appealing for continued support.

Sanitation in the United Provinces.

During the year 1910–11 special measures were adopted in the United Provinces of Agra and Oudh to improve sanitation and hygiene in both rural and urban areas. As the result of an inquiry into the prevalence of malaria in several districts special steps were taken to introduce the use of quinine on a large scale among school children as a prophylactic, to extend the sale of quinine among the general population, to effect general improvements in the conservancy arrangements of towns and cities, and to check infant mortality by providing trained midwives to assist the poorer population and by circulating simple directions for the feeding and care of infants. In addition to these measures steps were taken to formulate large schemes of drainage and water supply and to arrange to fill up insanitary pits and hollows. The Sanitary Commission adds that, "as these measures once started continue, there seems good reason to hope that the people will gradually learn some of the fundamental laws of health, and that this will lead to a progressive reduction in mortality generally, but more especially in that among children." Improved sanitation and better hygienic conditions of life will no doubt not be without their beneficent effect in reducing mortality among infants, but any appreciable reduction will be possible only when a thorough extension of education among India's women has taken place. It is pleasing, however, to be assured by Government that the "one obstacle in the way of carrying out sanitary reform now is not so much the apathy of the public, but a lack of sufficient funds."

Outbreak of Cholera.

Cholera has broken out in rather a severe form in Serampore. According to one account there are 50 cases daily. The water in the tanks, the chief source of the water supply in Serampore, has dried up owing to the deficient rainfall, and what is left is hardly fit for human consumption.

Match Makers in India.

The White Phosphorus Matches Bill has been withdrawn from the Imperial Legislative Council for this year. The report of the select committee on the bill contained a note of dissent which gave expression to the views of the Chambers of Commerce and other mercantile bodies in the country with regard to this bill. This note was to the effect that during the period which had elapsed since the Berne Convention of 1906 great improvements had been made in the methods of manufacturing phosphorus matches, with the result that the risk of necrosis has

been, it was thought, almost entirely eliminated. The dissentients suggested that inquiries should be made as to the accuracy or otherwise of the statement that "since 1906 there has been such improvement in the process of manufacture as to obviate the need for legislation," and that "similar inquiries should be made as to the extent of the hardship that the prohibition is likely to inflict on the poorer people of this country, particularly the agricultural classes."

UNIVERSITY EDUCATION IN INDIA.

When the Viceroy was at Dacca recently he announced that the university to be established there would be residential and teaching, as opposed to an examining university, and on the occasion of his Convocation speech as Chancellor of Calcutta University he announced what is practically a definite and most important change in the educational policy of the Government of India. For the future, so far as circumstances permit, the Government of India will take as its educational ideal universities which teach as well as examine. It is a change of prime importance to India. The five examining universities which at present exist have done valuable work, but an examining university ignores the moral and physical education of its undergraduates. Lord Hardinge's Government has boldly recognized the truth of criticisms which outside observers have pressed forward upon the notice of its predecessors.

Special Correspondence.

PARIS.

Gold Medal of Paris.—Syphilis and Pregnancy.—Radiography and Appendicitis.

THE highest honour given by the Paris Medical School is the gold medal in medicine. It is competed for each year by the *internes* of the Paris hospitals who have completed four years' service. The competitors are required to write a thesis on some original work undertaken during their period of office as *interne*. The theses, which must contain solid and useful work, are judged by the Council of Professors, five in number, and those candidates who have written satisfactory theses are admitted to the next stage of the examination. The second stage consists of an oral examination, lasting twenty minutes, on any chosen medical question. Each candidate is given a few minutes for reflection, and must then expound the subject in all its aspects for twenty minutes. After the oral examinations the jury makes its award. The gold medal this year was won by M. Menard (75 marks); the second place, with silver medal, by M. Lutembacher (74 marks).

At a recent meeting of the Academy of Medicine, Dr. Pamard related some observations on the transmission of syphilis from the father to the child without the mother apparently showing any syphilitic taint apart from abortion in the first and sometimes the second pregnancy. The children born after the mothers had been treated by mercury not only lived and showed no hereditary syphilitic characters, but in due course married, and their offspring to all intents were absolutely normal children and quite free from any specific taint whatsoever. Dr. Bar stated that in several cases of abortion due to syphilis in the husband a positive Wassermann reaction was obtained in the woman, even though she had shown absolutely no signs of syphilis.

Dr. Dupuy de Frenelle read an interesting paper on the uses of radiography in the diagnosis of appendicitis in obscure chronic cases. In some instances a bent appendix could easily be made out, a dense cord-like shadow being shown on the plate. In the discussion, M. Aubourg went so far as to say that in some cases the exact position of the caecum and the existence of adhesions between it and the appendix could be made out.

THE Hungarian Minister of the Interior has offered a prize of the value of 1,000 crowns for the best essay on the etiology of trachoma. The competition is open to the whole world. Essays must be sent in by December 31st, 1912; they should be addressed "Budapest, 1, Var, Belugyministerium." The award will be made during the meeting of the International Medical Congress to be held in London in 1913.

Correspondence.

LEPROSY IN THE UNITED KINGDOM.

SIR,—I have read the letters from Dr. H. Bayon, Sir Jonathan Hutchinson, and Dr. Abraham in your issues of March 23rd and 30th on the subject of "Leprosy in the United Kingdom" with much interest.

I presume the correspondence arose from some action proposed or taken by the St. Pancras Borough Council to enforce the notification of every case of leprosy occurring in the United Kingdom.

Compulsory notification of leprosy was recommended by the English delegates to the conference on leprosy held at Bergen in 1909. This preventive measure, supported by Dr. Bayon, is deprecated by Sir J. Hutchinson and Dr. Abraham.

The former remarks that there is no hint that the disease is spread (in the United Kingdom) by sporadic cases, although, as a rule, for long they are undiagnosed and unsuspected, and he infers that neither isolation nor registration are necessary, and it is not difficult to see that they are unjust and, in the case of leprosy, cruel.

The latter affirms that during the last forty years only two authentic cases of the disease have arisen in England, unless the leper had had some previous connexion with some foreign endemic centre. He then expresses the opinion that, however advisable stringent measures, such as notification, may be in places where leprosy is endemic or where it is spreading, they are not called for in this country, and adds that when cases of easily communicable diseases, such as tuberculosis and syphilis, are allowed every freedom, it is redundant and unnecessary that sufferers from leprosy should be penalized.

As I have lived and worked in a very large leper asylum for nearly seven years, and am in consequence myself a leper, the subject under discussion has naturally the very greatest interest for me.

I cannot give here the grounds for my belief; I hope to do so shortly, but they are as follows:

1. Leprosy is not hereditary.
2. Leprosy is contagious.
3. It is spread wholly and solely by contagion immediate or mediate.

I agree that it is not easily communicable from the sick to the healthy, not nearly so much so as phthisis, and certainly is not such a danger to the public health as syphilis.

In opposition to Dr. Abraham, I hold that it is precisely because there are few lepers in the United Kingdom that means should be taken to prevent contagion. It is while the lepers are few that prevention can be enforced with greatest prospect of success and with the least hardship. In many endemic areas—for example, India—segregation is practically impossible because the number of lepers is so great that no administration would face the cost. This applies to syphilis and tuberculosis in Great Britain and Ireland.

Sir Jonathan Hutchinson and Dr. Abraham seem very sure that those lepers who live in this country do not communicate the disease to others. With all the deference due to two *confrères*, for whose opinions I have the greatest respect, I am not so clear on this point.

Leprosy in an advanced stage, whether nodular or anaesthetic, can be easily diagnosed with certainty. Leprosy at its commencement, especially the anaesthetic form, is most difficult to detect. I have seen cases, especially amongst the children of lepers, which I had reason to suspect to be leprosy, in which my diagnosis would certainly have been disputed, and very reasonably disputed, in which, however, after the interval of some years, the advent of anaesthesia, paralysis, contractions, etc., have placed the diagnosis beyond the possibility of doubt. Not only may this uncertainty continue for years, but the disease, apparently, may never make any further advance.

I am convinced that if I presented myself for examination and treatment as an out-patient at our hospitals, especially if I concealed the fact that I had been associating with lepers, my disease would not be correctly diagnosed by the majority of the physicians. Many mistakes of this kind made by men of good repute, even

within an endemic area, have occurred to my knowledge. Therefore, when it is said that lepers in this country do not communicate the disease to others, it simply means they are not known to have done so. Possibly the two cases quoted may have been infected by intimate association with some undiagnosed case infected by an imported leper. At any rate, they cannot have arisen *de novo*.

The idea that lepers taken out of an endemic area are not dangerous is, I believe, largely due to the report that the Norwegian lepers who emigrated to America did not spread the disease. The recent increase of leprosy in America should make us cautious about accepting this opinion.

We do not know exactly how the disease is spread from person to person. That it is spread from the sick to the sound I have not the least doubt. I have the accounts of many lepers who, having no history of leprosy in their family, have become lepers after having lived with a leper.

It is highly important, in the public interest, that we should have a clear knowledge as to how the disease is passed from person to person. We are not likely to obtain this knowledge if cases occurring in England are hidden. If all cases were reported, their histories carefully investigated, and those with whom they had been in contact previous to the manifestation of the earliest signs were examined, I am convinced that, in the majority of cases, we should discover association with an imported leper or an unrecognized case infected by an imported leper.

It is in a country such as the United Kingdom, where leprosy is rare, that an inquiry of this description would have the greatest chance of resulting in success. It would mean much careful and minute investigation into each individual case, which could only be undertaken by persons accustomed to such inquiries.

The assertion that the leper has never been in contact with lepers must in all cases be received with distrust. Time after time it breaks down when carefully tested. I do not imply that the patient is always untruthful; this is by no means the case; frequently he is quite unaware that he has been associating or coming into contact with a leper. Not long ago I was talking to a Norwegian about leprosy in Norway; we were dining together. He assured me there were no lepers in the part of Norway from which he came. I knew that this was not correct. He also asserted most positively that he had not spoken to or even seen a leper. This I considered highly improbable. He was much surprised when I said to him, "At any rate you won't be able to say that any more, because you are speaking to a leper now."

Why should notification in the case of leprosy be stigmatized as "cruel"? Cruelty is the infliction of unnecessary pain or inconvenience; when the pain or inconvenience is necessary in the public interest there is no cruelty.

You may be sure I do not desire that lepers should be subjected to more restrictions or annoyances than are actually necessary. But they should cheerfully submit to any and every precaution likely to prevent others from suffering in the same way as they themselves are suffering.

I have seen leper asylums referred to as leper prisons. No one who has a large first-hand knowledge of the facts could make any such mistake. When I had the management of lepers I always tried to arrange that those who could isolate themselves on their own premises should be allowed to do so. The results were not encouraging. The vast majority could not maintain themselves. Many who could afford to support themselves continually disregarded the very simple precautions required of them and had to be segregated. Others voluntarily returned to the asylum because they found they were more comfortable there. This can easily be understood. A time comes to most of us when concealment is impossible, and a person whose face is disfigured by leprosies, or down whose expressionless face the tears and saliva are flowing, with contracted and missing digits, and bandages concealing sores, is not an acquaintance to be cultivated by many, or to be much in request in society; consequently he leads a lonely life, whereas in the asylum he is not shunned; he has other lepers to talk to, and the attendants are so accustomed to such things that they pay no attention to them.

With respect to myself, I am not at present contagious. That this is my firm conviction is shown by the fact that I have had a son living with me in the same house. Nevertheless, if any one invites me to visit him, I always acquaint him of the fact that I am a leper. He invariably tells me he does not care, and is not afraid, and almost equally invariably I am not asked to his house. I should be very silly if I resented this treatment.

In my opinion the notification of leprosy is most desirable from all points of view, and whenever it is necessary there should be power to compel segregation either in a leper asylum or under supervision at the patient's own home. The leper may object, but he must put up with it and regard it as a necessary consequence of his affliction.—I am, etc.,

April 15th. A Leper.

THE BRITISH MEDICAL BENEVOLENT FUND.

Sir,—I have just been reading—as I seldom fail to do—in the British Medical Journal the sad list of people whose cases have been considered for relief by the committee of the British Medical Benevolent Fund, and a thought which has constantly recurred to me when doing so again presents itself to my mind. It is this: From time to time I read in the papers accounts of bequests to charities by medical men, and it constantly happens that such accounts record the giving of legacies to hospitals, whilst, on the other hand, it is quite exceptional to find this worthy medical charity in any way benefiting from their gifts. And yet I would have thought that the claims of our poor and distressed brethren and the widows and children of medical men who are, in too many cases, in a desperate state of poverty, should take precedence of institutions which minister to the public at large, and so obtain a support which must, in the very nature of things, be wide and general.

It is, indeed, pitiable to read the list of cases applying for relief to the British Medical Benevolent Fund, and to realize how very inadequately the committee administering its finances is able to deal with them because of its slender purse. I feel convinced that in their kindly work these almoners must experience many a sad moment when they find that what they are able to give to the applicants to the charity falls so very far short of the requirements of the cases brought before them. So it is that I venture to write this letter, in the hope that members of our profession who are considering the matter of leaving legacies to other than their kith and kin may remember this essentially medical charity, and include it in their list.

I conclude by saying that I am impelled to write this letter by the interest I feel in the subject, and that, beyond being a subscriber to the British Medical Benevolent Fund—as I would that every medical practitioner who can afford it would be—I have no connexion with its governing body.—I am, etc.,

Swansea, April 14th. H. A. Latimer.

THE STUDY OF CONDUCT.

Sir,—This discussion is wandering far from its original limits, and the discursion is not to be regretted, for it enables me to clear up several matters as to which there are misunderstandings.

The original question was this: Was or was not I justified in saying "the psychiatric physician . . . not only makes no study of conduct, but denies that such a study is desirable, even if he admits that such a study is possible"? Dr. Newington, on the contrary, asserts, for himself and his colleagues, "that we do not object to study conduct, but only to the study of conduct as conceived by Dr. Mercier." I, on the other hand, have shown by unimpugnable documentary evidence that my colleagues, including Dr. Newington, did object *in toto* before they did or could have known how I desired it to be studied; and I have shown, moreover, that the way in which Dr. Newington supposed I wished conduct to be studied (that is, as classed or grouped with mental attributes) is the direct contradictory of the way in which I do wish it to be studied; still he maintains his opposition. On this original point of difference there is no more to be said, and I shall say no more; but in the course of the discussion Dr. Newington has raised several other issues which are much more important than the original one, and he has, moreover, discovered a terrifying bogey that I can exorcise for him, so I propose to follow for a short distance some of the

divagations and divarications into which he has led the discussion.

"Dr. Mercier now admits that conduct is the sole evidence, symptom, and sign of what the mind is doing." So says Dr. Newington, as who should say, "The Pope of Rome now admits that Roman Catholicism is the only true religion." I congratulate myself that after twenty years of effort, I have at last got Dr. Newington to appreciate that. Something, therefore, has been gained by this discussion.

Dr. Newington puts to me a problem. If three or four insane ladies make their way out of an asylum and break big windows with little hammers, how, he asks, would I differentiate between them and militant [and presumably sane] suffragettes? I am glad to have this problem put to me, for it gives me an opportunity of clearing up a misunderstanding to which I have hitherto not been quite alive; a misunderstanding that seems to underlie the criticisms of Dr. Urquhart and others. They appear to think—I apologize if I misunderstand them—that when I speak of judging insanity by conduct, I mean judging by a single act. This is far indeed from my meaning and intention. If I had meant one act, I should have said one act. It may be that a single act is of itself so insane, that by itself it carries insanity. When a lady, to whom I had been formally introduced, spat in my face without interchanging a word, I sat down at once and wrote a certificate of insanity without further ado, or further inquiry. The single act was in this case enough. But the act of breaking a window with a hammer is not necessarily insane. In order to determine, in any given case, whether such an act is sane or insane, we must have regard not only to the circumstances in which it was done, but to other parts of the conduct of the vitrofractors. We must take into account what they did and what they said before and after the act—it may be for a considerable time before, and for a considerable time after.

When I say that insanity is primarily a disorder, not of mind, but of conduct, I intend to state my doctrine, not of conduct, as Dr. Newington supposes, but of insanity. The word "primarily" has not the ambiguity that Dr. Newington attributes to it. It means first in order of importance. If I had meant, as he supposes I meant, in the first instance, or first in order of time, I should have said, not "primarily," but "firstly," or "first," which properly expresses that meaning. Dr. Newington says that it is the belief of every psychiatric physician, except myself, than insanity is primarily a disorder of mind, and not a disorder of conduct. I agree that this is so, and I am glad to have the admission, for I shall be able to call attention to it in a few years' time, when the opinion is all the other way, and when every one will be denying that his opinion has changed.

I omit any reference to Dr. Newington's criticism of my amoeba illustration. When he quotes my words he quotes me correctly, but when he puts a gloss on them I am lost in a maze of wonderment. Whence he gets his statement that "instinctive conduct is derived from instinctive action, which in turn is derived from instinctive motion, and this is evolved by the same 'motion' that energizes the amoeba"—where he gets this farrago of rubbish, which he attributes to me, I do not know; nor have I any inkling of what is meant by "motion universal" and "motion particular," which also he attributes to me.

Now I come to Dr. Newington's bogey, and a dreadful, turnip-headed, sheet-enveloped shallaballah it is. "We cannot afford," he says, "to dally speculatively for a moment with the great principle which maintains psychiatry in its existing phase—the principle that insanity is absolutely and exclusively a disease of the organ of mind, a material disease of a material part of the human economy. . . . If we for a moment admit and support the suspicion that there is any possibility of insanity not having a true physical basis in the brain itself," all kinds of dreadful consequences will follow. This denunciation and prediction make my flesh to creep, and all my bones to shake; for if it is true, I am in a parlous state, and alas! Dr. Newington is no better off, and every other psychiatric physician is in the same galley. For they all believe, so Dr. Newington tells us, that insanity is a disorder of mind, whereas in fact it is exclusively a disease of the brain; so that we are all wrong together. I have sometimes been called, very erroneously, a materialist, but if I were to suggest that mind is "a material part of the human economy," I should richly deserve the imputation.

Let me try to clear the issues. Dr. Newington and I both believe that the fundamental and underlying factor in insanity is disorder of the brain processes. Dr. Newington says that the brain is the organ of mind; and I agree that part of the brain—that part that in insanity is disordered—is the organ of mind, and that consequently there is always in insanity disorder of mind accompanying disorder of brain process. Here, if I understand him aright, Dr. Newington stops. His picture of insanity is now complete. Insanity is disorder of brain exhibiting itself in disorder of mind; and since we cannot directly examine the disorder of brain, we must take the disorder of mind as the indication, the symptom, and the measure of the disorder of brain. Primarily and practically, therefore, insanity is for us disorder of mind. This, I think, is the position of Dr. Newington, and this certainly was his position, and that of every other alienist, up to the date of the publication of my book on conduct.

But at this point I do not stop. I go farther, much farther. I, too, say that the central disorder is disorder of brain process. I, too, say that since the brain, or that part of it that in insanity is disordered, is the organ of mind, therefore disorder of mind accompanies disorder of brain, and is an integral factor in insanity. But, in contradistinction to every other alienist, I say that our picture of insanity is not yet complete. I say that the brain, or that part of it that in insanity is disordered, is the organ not only of mind, but of conduct also, and that when that part of the brain is disordered not only is mind disordered, but conduct also is disordered *pari passu*. Dr. Newington, as the spokesman of my other colleagues, says that, as they cannot directly observe the disorder of brain process, they are compelled to observe the disorder of mind, and to take the disorder of mind rather than disorder of brain as the criterion of insanity. I say that disorder of mind is as completely hidden from direct observation as is disorder of brain; and that, as we cannot get at brain except through mind, so we cannot get at mind except through conduct; and therefore it is that I say insanity is primarily disorder of conduct. Primarily means first in importance. Disorder of conduct is first in importance to us as members of the community, because it is only through conduct that the insane person can injure the community. Disorder of conduct is first in importance to us as physicians, because only through the observation of conduct can we gain any insight or hazard any guess as to the other two factors in insanity—the disorder of mind and the disorder of brain.

But even yet my picture of insanity is not complete. That brain process that is accompanied by mental process and that actuates conduct has yet a further function, and when the brain process is disordered not only is mind disordered, not only is conduct disordered, but this other function also is disordered, and thus insanity has not a twofold but a fourfold characterization. This fourth function of the highest regions of the brain is a trophic function. It regulates the metabolism and all the functions subsidiary and conducive to metabolism throughout the whole body, and when the highest regions of the brain are disordered in their working the metabolism of the body and the functions subsidiary and conducive to metabolism, or some of them, are also disordered.—I am, etc.,

Parkstone, Dorset, April 13th. CHAS. MERCIER.

P.S.—I must express my regret that more than once Dr. Newington has misspelt that fine and expressive old English word "metagrabolise." Even if he is unfamiliar with it—which, considering the centuries during which it has been naturalized, is improbable—its manifest Greek origin should have saved him from converting the first vowel into an *a*.—C. M.

⁂ It is only right that we should clear Dr. Newington from this heavy charge. We alone are responsible for "matagrabolize," which has no more to do with *meta* than Monmouth with Macedonia. This kind of etymological subtlety is one of the pitfalls of a classical education. *Matagrabolizer*, as all good Pantagruelists should know, is one of the many inventions of Rabelais. It will be found, for instance, in Louis Moland's edition—"*très soigneusement collationnée sur les éditions originales*" in the nineteenth chapter of the first book—*La*

Harangue de Maistre Janotus de Bragmardo faicte à Gargantua pour recouvrer les cloches. Of that oration the composer says, "*Il y a dixhuit jours que je suis à matagraboliser cette belle harangue.*" In the glossary it is explained that *matagraboliser* is a "*mot burlesque ayant le sens de se donner beaucoup de mal pour rien, de s'ennuyer et d'ennuyer les autres.*" This glossary is for the enlightenment of Rabelais's countrymen, and the word does not appear in Littré. Balzac, who in the *Contes Drôlatiques* imitated Rabelais, says, in the story called "*Les Joyeusetez du Roy Louis Unze,*" that the Cardinal "*revint horrificquement matagrobolizé.*" In Sir Thomas Urquhart's translation of Rabelais, *matagraboliser* is said to be "a word forged at pleasure, which signifies the studying and writing of vain things." He quotes Duchat as saying that when the creator of Gargantua coined this vocable he had in mind the three words, μάταιος (ineptus), γράφω (scribo), and βάλλω (jacio), making ματαιογραφοβαλίζειν, from which he afterwards formed his French word *matagraboliser. Metagraboulizer* does, indeed, appear in Cotgrave in the French part, but not in the English. It is defined by him to mean "to dunce upon, to puzzle or (too much) beat the brains about." We gather from the *New English Dictionary* that it has to some extent become naturalized as "metagrobolize"—an instance of the deformed transformed. We submit to both our distinguished correspondents that to continue this discussion would "too much beat the brains about" and risk "duncing upon" our readers. We accept Cotgrave's definition, though it differs both from that of Duchat and that of Moland, as it is more polite than either *ineptas scripturas mittere*, or "se donner beaucoup de mal pour rien, s'ennuyer et ennuyer les autres."

MEDICINE AND THE CHURCH.

SIR,—My attention has been called to an article in your issue of March 9th, entitled "Medicine and the Church." I am not concerned with the general argument of the article, but I feel it to be my duty to point out a serious mistake into which you have fallen when referring to our work in Emmanuel Church, Boston. You say, in describing the inception of our effort, that:

> Clergymen were to minister to minds diseased, while for the treatment of any coexisting or underlying bodily complaint the aid of the physician was to be invoked. We believe that this scheme, praiseworthy in its conception, has not been adhered to, the clergymen having embarked on a career of independent practice as healers.

Allow me to say that, in making this latter statement you are quite mistaken, though such a blunder may be pardonable in a writer describing something which is taking place 3,000 miles away. But it ought to be known that what is popularly called the "Emmanuel Movement" has for one of its fundamental ideas the co-operation of physician and minister, a co-operation which, so far from slackening, has become more and more close as time has passed by. Without such medical control, neither my honoured colleague, Dr. Worcester, nor I would undertake the work of trying to help persons suffering from such troubles as neurasthenia or alcoholism. As we are not only students of theology, but lovers of science, we could scarcely retain our self-respect if we ventured to do what your article alleges we are doing—that is, "embark on a career of independent practice as healers."

In conclusion, I would call the attention of your medical readers to the rules which govern our work and which were drawn up by four of the most distinguished physicians of this city. These rules, which are strictly adhered to, may be found in the appendix to the book entitled *The Christian Religion as a Healing Power.*—I am, etc.,

Emmanuel (Episcopal) Church, Boston, U.S.A., March 19th. SAMUEL MCCOMB.

*** We can only express our regret for the mistake, which was founded on statements made in certain American journals, which Dr. McComb's letter shows to have been inaccurate.

THE NEW CELL PROLIFERANT.

SIR,—Mr. C. Walker is mistaken in supposing that the division forms of leucocytes produced by Mr. H. C. Ross are in any way artefacts, or the results of mechanical agency, or "sports." The shape of the typical forms is much too definite, and the structure too regular and specialized, especially as regards the dividing so-called nucleus and the very remarkable arrangement of the granules, to admit of this explanation; and the forms are produced in such numbers and with such certainty that they cannot possibly be "sports." I have studied them with care, and have discussed them with equal care in the *Proceedings of the Royal Society of Medicine*, 1911, vol. v, pages 103–108, and have no doubt whatever that they are dividing leucocytes, and that they are caused to divide by Mr. Ross's methods. Mr. Walker says that he is unable, after trial, to confirm the work. I infer from this only that he has never really seen the typical forms. Such statements are always made regarding every new observation.—I am, etc.,

Liverpool, April 10th. RONALD ROSS.

WE have received a letter from Mr. H. C. Ross in which he declines further correspondence with Dr. Charles Walker, believing that Mr. Walker has not properly repeated his experiments or appreciated the arguments founded on them. Mr. Ross also sends us copies of letters received by him from Mr. Murray, the publisher of his book, with reference to Mr. Walker's refusal to give permission for the reproduction of certain illustrations, but as this matter appears to concern these three gentlemen alone it does not seem necessary to pursue it further.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council was held on April 11th, Mr. Rickman J. Godlee, President, in the chair.

Presentation to Mr. Burne.

A presentation was made to Mr. R. H. Burne, M.A.Oxon., on his retirement from the office of Assistant Conservator of the Hunterian Museum, in recognition of the able and efficient services rendered by him during a period of twenty years.

Odontological Demonstrations.

Mr. J. F. Colyer was appointed to give three demonstrations on the odontological collection in the Museum.

The John Tomes Prize.

This prize was awarded to Mr. A. Hopewell Smith.

Begley Studentship.

Mr. A. C. Perry, of the London Hospital Medical School, was appointed to this studentship for the ensuing three years.

Honorary Fellow.

Lieutenant-Colonel J. J. Pratt, I.M.S., a member of twenty years' standing, was made a Fellow, in recognition of his valuable services in connexion with hospital administration and surgical work in India.

Recognition of Institutions.

The following institutions were added to those recognized by the Examining Board in England, for instruction in Chemistry and Physics: Maidstone, Technical Institute; Cirencester, The Grammar School.

The following universities were added to the list of foreign universities whose graduates are exempted from the first and second examinations of the Board under the conditions of Paragraph IV, Section III, of the Regulations: Tulane University of Louisiana; Howard University, Washington.

The course of laboratory instruction in public health given in University College and the City Bacteriological Laboratory, Nottingham, was recognized for the Diploma in Public Health.

International Eugenics Congress.

Mr. G. H. Makins was appointed college delegate to attend the meetings of the International Eugenics Congress to be held at the University of London, July 24th to 30th, 1912.

Child-Study Society.

Mr. C. T. Dent and Sir Alfred Pearce Gould were appointed delegates to attend a conference of the Child-Study Society to be held in the University of London on May 9th, 10th, and 11th.

The National Insurance Act.

The President reported the resolutions adopted at the conference on the National Insurance Act held in the College of Physicians on March 21st, when representatives of the two colleges, of the Society of Apothecaries, and of the medical faculties of the universities in England were present (BRITISH MEDICAL JOURNAL SUPPLEMENT, March 30th, page 356).

ROYAL COLLEGE OF SURGEONS IN IRELAND.

DR. G. JAMESON JOHNSON, Visiting Surgeon to the Royal City of Dublin Hospital, has been elected Professor of Surgery in the vacancy caused by the resignation of Dr. William Stoker.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE (*Part I, Chemistry, and Part II, Physics*).—*A. J. Bado, P. Banbury, *B. E. Barnes, †G. A. Beyers, C. M. Bullpitt, *D. M. Dickson, *A. B. Dummere, †H. J. Ewart, A. A. Fitch, †W. V. Gabe, A. N. Haworth, C. G. Hooper, W. K. T. Hope, *G. H. Howe, C. H. Jenkins, Florence Kerruish, *J. M. M. Marshall, *L. W. Moore, J. W. W. Newsome, R. W. Payne, *D. R. Reynolds, *R. J. Scarr, B. C. W. Simpson, *C. M. Slaughter, E. L. Stephenson, †P. Ward, *H. G. Watters, †G. W. Wheldon, †T. Wilson, *J. Wiseman, †L. H. Woods.

* Passed in Part I only. † Passed in Part II only.

FIRST COLLEGE (*Part III, Elementary Biology*).—A. Arias, P. A. Ashcroft, A. J. Bado, T. B. Bailey, G. A. Beyers, J. R. S. Bowker, A. Bulleid, G. F. Cobb, A. A. K. Conan Doyle, A. V. S. Davies, C. J. C. de Silva, W. R. Dickinson, A. A. H. El-Zeneiny, H. J. Ewart, W. Farquharson, O. F. Fehrsen, A. A. Fitch, M. R. V. Ford, O. Halstead, J. M. Harrison, A. N. Haworth, S. N. Hayes, C. B. Henry, C. G. Hitchcock, H. M. Hobson, G. Hoffmeister, C. E. Hopwood, P. G. Horsburgh, G. H. Howe, J. M. Hughes, Mabel M. Ingram, W. G. Johnston, C. S. J. Kearney, Florence Kerruish, C. H. Laver, E. F. Llarena, J. M. M. Marshall, R. Moser, H. L. Pridham, C. N. Ratcliffe, O. A. L. Roberts, A. H. Samy, R. J. Scarr, D. Stewart, M. T. Talaat, P. Ward, C. J. L. Wells, H. M. Wharry, W. H. White, T. Wilson, W. E. Wilson, T. F. Zerolo.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—J. H. Blackburn, M. Seeraj, R. Prasad, C. F. Pereira, W. G. Bowie, D. C. M. Page, T. D. Renwick, Z. A. Green, N. R. R. Ubhaya, R. V. Clarke, W. A. S. George, E. C. Brooks, J. H. Bain, J. J. Armistead, J. E. Ainsley, T. T. Hoskins, and M. A. White.

SECOND COLLEGE.—Q. Stewart, A. Craig, W. Turner, C. L. W. Fleming, C. T. Darwent, E. Annequin, Agnes Rothe, J. T. Brady, G. L. W. Iredale.

THIRD COLLEGE.—G. Hardie, H. E. Rose, C. M. G. Elliott, J. M. Hiddleston, M. McCloskey, A. Sinha, W. Chapman, C. Dolan, T. Hardie.

FINAL.—Florence A. Scott, C. G. Timms, H. J. Browning, J. M. Dalzell, L. E. Davies, W. W. W. Watt, D. J. Neethling, S. D. Large, J. M. R. Hennessy, W. F. Gibb, G. A. Macvea, C. L. Bhatia, J. Hegarty, C. H. Hayton, W. C. Dunscombe.

Medico-Legal.

VISITING MEDICAL OFFICERS OF HOSPITALS AND THE CORONERS ACT, 1887.

DR. R. BOYD ROBSON (Seven Kings, Essex) writes: The establishment of a cottage hospital in the district of Ilford has enabled the practitioners there to realize the gross injustice which it is possible for the above Act to inflict on them. A fortnight ago I was summoned up to the hospital to attend an accident which proved fatal. The cause of death was quite obvious, but for all that I was ordered to make a *post-mortem* examination. That necessitated my going down to the Ilford mortuary, to which the corpse had been transferred, and spending some time there. Subsequently there was the attendance at the inquest and the giving of evidence, and then the finale—not legally entitled to a fee by Art. 22, Coroners Act, 1887—because the case died in a hospital.

It is needless to say that I was astounded to learn that a medical officer connected with an institute, though non-resident at that institute, was regarded under the Act on the same footing as a resident medical officer. I had always considered the Act unjust to residents, but it is doubly so to those general practitioners who gratuitously give their services to a local hospital. It surprises me that up to the present there has been no organized protest against the measure. Probably the reason is that at a general hospital the routine in connexion with a fatal accident has been left entirely to the resident surgeon, without in any way inconveniencing his principal, whether he be a consultant or general practitioner. Further, I gather from the annual report of the Medical Protection Society that in the case of cottage hospitals coroners have been in the habit of allowing fees to doctors who attended fatal accident cases, but have recently been forbidden to do so by the county. I trust action will be taken by the British Medical Association to secure fairer treatment for its members. I did mention my case at a meeting of the Stratford Division of the British Medical Association, and it was unanimously resolved to invite the attention of the Executive to the matter. I also wrote to the member for Romford and received the subjoined reply. From it one can easily judge how forcibly the shabbiness of such treatment of the members of the medical profession strikes members of the laity. If, then, the various Divisions of the British Medical Association were to bring a case such as mine before the notice of local members of Parliament, I am sure the remedy we seek would not be difficult to attain.

Copy of Sir John Bethell's Letter.

Dear Dr. Robson,

I am in receipt of your favour of the 9th inst. giving your experience in connexion with a case at Ilford, and I must say that you have been treated very badly in the matter, and you can assure your medical friends at Ilford that I shall be pleased to support the amendment of the Coroners Act of 1887, so as to enable medical men to make a proper charge for their services in connexion with matters under the Act.

If you would like to see me upon the question at any time I shall be pleased to give you an appointment at the House of Commons.

Yours very truly,
(Signed) JOHN HENRY BETHELL.

House of Commons,
April 11th, 1912.

*** In a leader on Coroner's Law and Death Certification published in the JOURNAL of July 9th, 1910, page 99, attention was drawn, not for the first time, to the recommendation of the Departmental Committee on Death Registration that medical officers of public institutions should be placed on the same footing as other practitioners in regard to fees for giving evidence at inquests and for making *post-mortem* examinations.

The grievance of visiting medical officers of charitable institutions in that they do not receive any remuneration for giving evidence at inquests, and for performing *post-mortem* examinations on patients dying in the institution, was referred to in the memorandum of evidence of the British Medical Association forwarded to the Departmental Committee on Coroner's Law, etc., appointed in 1908, and in the Draft Coroners Bill, prepared by the British Medical Association in 1905, a clause was inserted providing that a registered medical practitioner who has attended at a coroner's inquest in obedience to a summons of the coroner under the Coroners Act, 1887, should be entitled to such remuneration as follows:

(*a*) For every day on which such practitioner so attends to give evidence at an inquest 1 guinea;

(*b*) For making a *post-mortem* examination of the body of the deceased without an analysis of the contents of the stomach or intestines or other part of the body 1 guinea;

Provided that no remuneration shall be paid to a medical practitioner for making a *post-mortem* examination without the previous direction of the coroner.

The question of Coroner's Law and Death Certification is under the consideration of the Parliamentary Subcommittee of the Medico-Political Committee.

Obituary.

WILLIAM OGLE, M.D.OXON., F.R.C.P.LOND.,

LATE SUPERINTENDENT OF STATISTICS, GENERAL REGISTER OFFICE.

DR. WILLIAM OGLE died at his residence in London on April 12th in his 85th year. He was the fourth son of Dr. J. A. Ogle, Regius Professor of Medicine in the University of Oxford. He was educated at Rugby, and went up to Oxford as a scholar of Corpus Christi College, of which he was elected a Fellow on his twenty-first birthday. He at first intended to enter the Church, and went so far as to take deacon's orders, but at an early date abandoned this intention and became a student of St. George's Hospital. He became a member of the Royal College of Physicians of London in 1859, and a Fellow in 1866, and graduated M.D.Oxon. in 1861. He was appointed Lecturer on Physiology in the Medical School of St. George's Hospital, and in 1869 Assistant Physician to the hospital. As a teacher of physiology, a science then in its infancy, he attracted not only students of St. George's School, but many others, who found in his lectures an opportunity not otherwise easily available of becoming acquainted with the rapid progress of the new science. He was beginning to prove equally attractive as a teacher in the out-patient department when, in 1872, he unexpectedly resigned the office of Assistant Physician on the ground of ill-health.

He was for a time Medical Officer of Health for East Hertfordshire, but in 1880 was appointed to the office in which his chief distinction was to be earned; he succeeded Dr. Farr as Superintendent of Statistics in the General Register Office, and perhaps the highest praise which could be given to him was that he was a worthy successor of that distinguished man. Dr. Ogle was responsible for the census reports of 1881 and 1891, and for the Decennial Supplement to the report of the Registrar-General, 1871–1880. His reports in these volumes contain the results of investigations into the mortality of different occupations, and led him to contribute to the *Transactions* of the Royal Medical and Chirurgical Society, of which he

had been Honorary Secretary, a paper on Mortality in the Medical Profession. Subsequently, most of his contributions to statistics were published in the *Journal of the Statistical Society*, but his letters to the Registrar-General, prefixed to the annual reports, are with his other official reports probably his most valuable contributions to medical science. In the Annual Report for 1880 he wrote articles on small-pox and vaccination, in that for 1881 on statistics of marriage, in that for 1882 on the proportion of illegitimate births in workhouses, in 1884 on the ages of marriage in different European countries, and on the increase of cancer, and in 1886 on the death-rates of scarlet fever at different ages. In the report for 1891 he issued a life table for the first year of life, showing the causes of death in that age period, and to the volume for 1887 he contributed an essay on fifty years of civil registration, dealing principally with mortality statistics. In 1886 he wrote a report on the condition of the working classes; he gave evidence before the Census Committee in 1890, the Death Certification Committee in 1895, the recommendations of which have never been carried out, and the Royal Commission on Vaccination in 1889. He was also a member of the Royal Commission on the Metropolitan Water Supply in 1893.

Dr. Ogle was the author of several scholarly translations of various works of Aristotle. In 1882 he published, with an introduction and notes, a translation of the Greek philosopher's treatise on the parts of animals. The introduction has been described as the best general statement of Aristotle's work in the sphere of biology. An edition of this translation, revised by Dr. Ogle himself, was issued last year in the series of translations of the works of Aristotle published by the Clarendon Press. In 1897 Dr. Ogle published a translation of Aristotle's treatises on youth and old age, life and death, and respiration, with an elaborate introduction and notes which occupy more than half the book. Dr. Ogle also translated Professor Kerner's *Flowers and their Unbidden Guests*. He was himself a botanist of no mean standing, and was a friend of Hooker and Darwin.

Dr. Ogle was a burly, robust man, and remembering this and the circumstance that he attained the age of 85, makes the fact that he resigned his appointment at St. George's Hospital forty years ago on the score of health seem almost absurd, and shows how mistaken a man may be in judging his own capacities. He was a man of genial presence, of ripe speech and wit, very approachable, and always ready to give help to any inquirer who had any sort of claim upon his assistance. His wife, the daughter of Mr. Allen Block of Highgate, a lady well known in literary and musical circles, died three years ago; there were no children of the union. Dr. Ogle had suffered for some years from osteo-arthritis, which greatly crippled his movements, but in spite of this he continued to frequent the Athenaeum Club, and there among his friends he seemed to forget sufferings which must often have been acute. The funeral took place on April 16th at Golder's Green.

CHARLES O'FARRELL, L.R.C.P. AND S.EDIN.,

CHAIRMAN OF THE EAST NORFOLK DIVISION OF THE BRITISH MEDICAL ASSOCIATION.

GREAT regret is caused by the unexpected death of Dr. Charles O'Farrell, of Yarmouth. He had been in his usual health, and attended to his practice on April 5th; death, which occurred early on the following morning, was due to cerebral haemorrhage.

Charles O'Farrell, who was born in Dublin, received his medical education at the Ledwich School of Medicine, and took the diplomas of L.R.C.P. and L.R.C.S. Edin. in 1885. In 1889 he was appointed medical officer to the North District of the Great Yarmouth Union, and he was also medical officer to the Post Office, appointments which he held at the time of his death. He took a great interest in Volunteer work and in first-aid instruction. He joined the 2nd Volunteer Battalion of the Norfolk Regiment, and rose to the rank of Major with command of the Head Quarter Companies. After the introduction of the Territorial system he commanded for some time the Great Yarmouth detachment of the 5th Battalion of the Norfolk Regiment. He also took an active share in the organization of the Voluntary Aid Detachment, and it was through his efforts that the Corporation challenge bowl was obtained and offered for annual competition.

The funeral, which took place on April 9th, was very largely attended, among those present being representatives of the East Norfolk Division, which had sent a handsome floral wreath, the Chairman of the Yarmouth Board of Guardians, the Commanding Officer of the Yarmouth Detachment, 5th B.N.R., the President of the Irish Society of East Anglia, and representatives of the Boys' Home, of which Dr. O'Farrell was for many years Honorary Medical Officer.

WE have the regret to record the death of Dr. PEMBROKE MINNS, of Thetford, which took place on March 31st after a prolonged period of failing health, which led to his retirement from practice some time ago. Dr. Minns was born at Nassau, in the Bahamas, in 1840, and received his medical education at Guy's Hospital. He took the diploma of M.R.C.S.Eng. in 1861, and became M.D.St. Andrews in the following year. After serving the office of Resident Accoucheur at Guy's Hospital he joined Mr. Best, of Thetford, and continued in practice there for over half a century. He was Certifying Factory Surgeon, held various Poor Law appointments, and was a member of the staff of the Thetford Cottage Hospital. He earned the respect alike of the public and the members of his own profession, and two years ago was President of the East Anglian Branch of the British Medical Association, and gave an address at its annual meeting at Thetford. Dr. Minns, although of retiring disposition, had a large circle of friends, and was extremely hospitable, as was evidenced by the luncheon at which he entertained the members of the East Anglian Branch at its annual meeting. He was for three years a member of the Thetford Town Council, and was Chairman of the Thetford Gas Company, but did not take any promient part in the public or political life of the district. The interment took place at Thetford on April 4th.

DR. DONALD CAMPBELL died from pneumonia at his residence at Calne, Wilts, on April 14th. Dr. Campbell, who was 70 years of age, was of Scottish birth, and received his medical education at the University of Glasgow, where he graduated M.D. in 1864. After a short sojourn in Gloucester, he settled in Calne in 1867, where he was in practice until his death. He was Medical Officer to the Calne Workhouse, etc., and Medical Officer of Health to the Urban and District Councils. He was a hard-working and painstaking practitioner of original ideas, very quick to see the advantages and disadvantages of any new scheme, and not afraid of stating his opinions. It was due to his initiative in his earlier days that Calne is supplied with a plentiful and very pure supply of water, and also an efficient scheme of sanitation in connexion with a sewage farm; the result has been that typhoid fever, locally known as "Calne fever" owing to its endemic prevalence in the town, was practically banished. It was due to his advice also that Calne was, we believe, the first of the smaller towns to possess an isolation hospital. He was widely known throughout the neighbourhood, and much liked by his patients, by whom his kindly presence will long be missed. He was twice married, first to Miss Waddy, a sister of the late Judge Waddy, and secondly to Mrs. Bishop, the widow of his late partner; by this lady he is survived. He leaves no family. He was a Wesleyan Methodist and had strong views on temperance. He was a member of the British Medical Association.

INSPECTOR-GENERAL SIR JAMES JENKINS, K.C.B., R.N., retired, died at Plymouth on April 5th, aged 93. He was the son of Mr. W. Jenkins, of Kirkconnel, Dumfries, and obtained the M.D.Glas. in 1839, and the diploma of M.R.C.S.Eng. six years later. He entered the service as Assistant Surgeon in December, 1841, became Staff Surgeon in 1863, Deputy Inspector-General of Hospitals in 1872, and Inspector-General in 1878. He served as Surgeon-in-Charge of the Naval Brigade in the Crimea throughout the winter of 1854, and until the capture of Sebastopol, and was present also at the capture of Kinburn, landing subsequently to attend the wounded. He received the Crimean and Turkish medals, and was created a

Knight of the Legion of Honour. He served in the ships *Belleisle* and *Simoon* during the China war, 1857–61, and received the medal and two clasps. From 1861 to 1869 he was Senior Medical Officer to the Plymouth Division, Royal Marine Light Infantry, and then until 1872 he was with the Royal Marine Light Infantry at Eastney. After being promoted to the rank of Deputy Inspector-General of Hospitals and Fleets, he served at the Royal Navy Hospital, Bermuda, from 1872 to 1875, and at the Royal Naval Hospital, Plymouth, from 1875 to 1878. In 1882 he was appointed Honorary Surgeon to Queen Victoria, and in June, 1887, on the occasion of the Jubilee, was created K.C.B., having received the C.B. in 1867.

Public Health AND POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL SERVICE AND SUPERANNUATION.

S. S., who is a workhouse and district medical officer about to resign both appointments, asks how the amount of his superannuation is to be calculated.

*** This is mainly ruled by Section 3 of the Act of 1896, which is as follows:

> An officer or servant who has served for ten years but less than eleven years shall be entitled to an annual allowance equal to ten-sixtieths of the average amount of his salary or wages and emoluments during the five years ending on the quarter day which immediately precedes the day on which he ceases to hold his office or employment with an addition of one-sixtieth of such average amount for every additional completed year of service until the completion of a period of service of forty years, when a maximum allowance of forty-sixtieths shall be granted.

It appears that this will enable our correspondent to claim on his salaries and extra fees paid to him by the guardians, except any fees he may have received for certifying lunatics for asylum. The length of service is to be estimated by the number of years he has served in the longer-held appointment of the two.

The Services.

THE ROYAL NAVY MEDICAL SERVICE.

THE course for acting surgeons, Royal Navy, terminated at Haslar on April 16th, when Sir James Porter, K.C.B., etc., Director-General of the Medical Department of the Navy, gave away the prizes and delivered a short address to the newly-entered surgeons, R.N., congratulating them on their diligence and on the good work they had done at Haslar.

The Gold Medal and Admiralty Prize (a surgical dressing case) were gained by Acting Surgeon M. M. Melrose, formerly of Manchester University and Middlesex Hospital, who gained the highest aggregate marks in the London and Haslar examinations.

The Silver Medal and Admiralty Prize were won by Acting Surgeon C. H. Symons, formerly of Charing Cross Hospital, who takes the Second place.

Acting Surgeon G. D. Macintosh was awarded the third Admiralty Prize for being first in the analysis group of subjects taught at Haslar. As this officer entered as a Colonial candidate and elected to sit for qualification only and not for competition at the London examination, he is assigned, in accordance with the regulations, the last place in the seniority list.

The order of seniority as determined by the sum of the marks obtained by each acting surgeon at the London and Haslar examinations is as follows:

	Marks Obtained (Maximum 4,800).
1. Melrose, Malcolm M.	3,661
2. Symons, Cecil H....	3,491
3. Clark, Alfred B., M.B.	3,455
4. Cockrem, Guy B....	3,355
5. Hull, Herbert R. B.	3,313
6. Thatcher, Charles M. R., M.B.	3,312
7. Goodwin, Ernest St. G. S. G., M.B. ...	3,268
8. Fergusson, George D. G.	3,263
9. Barlee, Ronald J....	3,180
10. Macintosh, George D., M.B. (Colonial candidate)	—

DECORATIONS FOR SERVICES AFTER THE ITALIAN EARTHQUAKE.

THE King has granted authority to accept and wear the decorations following conferred upon the following medical officers of the Royal Navy by the King of Italy in recognition of valuable services rendered by them at the time of the earthquake in Southern Italy in 1908:

Commander of the Order of St. Maurice and St. Lazarus.—Deputy Surgeon-General James O'Brien Williams, M.D.

Officer of the Order of St. Maurice and St. Lazarus.—Staff Surgeon P. T. Sutcliffe, M.B., Staff Surgeon Elyston Glorydd Evelyn O'Leary, F.R.C.S.Edin., Staff Surgeon Frederick Mason Mahon, Staff Surgeon John Scarborough Dudding.

Commander of the Order of the Crown of Italy.—Fleet Surgeon Percy Edmund Maitland, Fleet Surgeon Arthur Edward Kelsey, M.B., Fleet Surgeon Edward Henry Hodnet de Courtmacsherry, M.D., Fleet Surgeon William John Colborne.

Officer of the Order of the Crown of Italy.—Staff Surgeon Percival Thomas Nicholls, Staff Surgeon Pierce Leslie Crosbie, F.R.C.S.I., Staff Surgeon Reginald Thompson, Staff Surgeon Robert Kennedy, M.B., Surgeon Hugh Bernard German, Surgeon Frederick George Wilson, M.B., Surgeon Horace Bryden Hill, M.B., Surgeon William Charles Carson.

Medical News.

THE twenty-ninth annual general meeting of the Medical Sickness Annuity and Life Assurance Friendly Society will be held at 11, Chandos Street, Cavendish Square, W., on Thursday, May 9th, at 4.30 p.m.

DR. MILSON RUSSEN RHODES has resigned the honorary secretaryship of the Organization Subcommittee of the National Medical Union. All communications in future should be addressed to the Secretary, National Medical Union, Mr. J. Webster Watts, F.C.A., 5, John Dalton Street, Manchester.

ON Wednesday evening, April 10th, Dr. Langdon Brown, vice-president, in the chair, the third annual award of the Hunterian Society's medal was made to Dr. A. Goulston of Heavitree, Exeter, for his essay on "The Use of Sugar in Heart Disorders." Dr. Goulston, after receiving the medal, read an abstract of his essay.

THE annual meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, April 23rd, 1912, at 4 p.m. A discussion on Alcoholism in the Army and Navy will be opened by the Rev. J. H. Bateson, General Secretary of the Royal Army Temperance Association, India, 1889–1909.

DR. A. B. TIMMS, the old Scottish International, who has for some years been Medical Officer to the Cardiff Board of Guardians, was entertained to dinner last week by a large gathering of friends. Dr. Timms, who is leaving to practise in Surrey, was the recipient of some handsome plate and many other tokens of the esteem in which he is held.

THE adjourned discussion on "The Therapeutic Value of Alcohol" before the Hunterian Society will take place on Wednesday, April 24th, 9 p.m., at the London Institution, Finsbury Circus, E.C. All members of the medical profession are invited to attend. The president (Dr. Hingston Fox) will open the adjourned discussion, summing up the arguments of the speakers on the opening night. It is expected that the following will speak: Sir T. Lauder Brunton, Mr. G. Mansell Moullin, Dr. Stoddart, Dr. E. W. Goodall, Dr. W. Langdon Brown, Dr. Currie. Sir Victor Horsley will reply.

AT the annual meeting of the Norfolk and Norwich Hospital on April 13th, the Chairman stated that the deficit on the year had raised the overdraft at the bank to £7,858, and expressed the opinion that recent legislation had lessened the probability of the greater support necessary for the upkeep of the hospital being obtained. Unless the financial position improved by the middle of the year, the question of closing a ward would have to be considered.

AT the annual meeting of the Metropolitan Hospital Saturday Fund on April 13th it was reported that the sum received during the year amounted to £45,468, of which £34,084 had been distributed, some two-thirds going to general, special, and cottage hospitals, £1,681 to convalescent homes, and £993 to dispensaries. The total receipts for the year were some £3,100 higher than during the previous twelve months. The chairman (Sir Thomas Vezey Strong), among other speakers, expressed some apprehension as to the possible effect of the National Insurance Act on the success of the Fund, and a belief that the voluntary system of hospital administration ought to be preserved to the last, not only because it was good for the patients, but because it ensured efficiency, economy, and sympathetic administration. Finally, a resolution was passed unanimously advising the upholding of the voluntary hospital system, and urging that under the National Insurance Act provision should be made for payment to hospitals for work done on behalf of insured persons.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London*. The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London*.

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

BULIMIA.

SCOTUS asks for suggestions in treatment of elderly patient, who suffers from bulimia. The urine is free from sugar, and there are no symptoms pointing to tapeworm.

INCOME TAX.

TAX puts the case of a partnership assessed to income tax at £600, subject to allowance for partner A. of £160 abatement, £17 life insurance, and £30 for children, and for partner B. of £150 abatement and £8 life assurance, the net sum charged with tax being £235. A. keeps a motor at a cost of £170, and B. does a little hiring. He inquires whether these items are to be taken into consideration in apportioning the tax. A. has two-thirds share and B. one-third.

*** It rests with the partners to decide on what lines the division is to be made. If it is desired to take into account unequal expenses and allowances, the following basis should be adopted: Supposing B.'s expense for hiring to be £40, the sum to be apportioned before allowing for motor expenses would be £600 + £210, or £810.

A.'s share would then be:

		£
Two-thirds of £810		= 540
less		
Abatement	£160	
Life Assurance	£ 17	
Children	£ 30	
Motor	£170	
	—	377
		£163

And B's share:

		£
One-third of £810		= 270
Abatement	£150	
Life Assurance	£ 8	
Hiring	£ 40	
	—	198
		£ 72

ANSWERS.

DR. VOS.—The brothers Rheinberg state explicitly that from the point of view of a method intended for commercial success no claim is made for their micro-spectra process of colour photography by prismatic dispersion. The method necessitates a special and costly camera, and, in view of the ease with which results can be obtained by any screen-plate method, this more elaborate process is not at present, at least, suitable for general use. It is put forward for its scientific importance and possibilities, which are considerable. Mr. Rheinberg's address is 25, The Avenue, Brondesbury Park, N.W.

LETTERS, NOTES, ETC.

MORPHINE POISONING.

DR. J. BARKER SMITH (London, S.E.) writes: Dr. D. M. Macdonald (Leven, Fife) asks me a direct question in the BRITISH MEDICAL JOURNAL of March 23rd, which I will try and answer. In the first place, it is a matter of experiment, and I have, therefore, just obtained a bottle of Condy's fluid. On the label I find the following: "Condy's Fluid consists of active oxidizing sanitary compounds of uniform strength, and contains no permanganate of potash (poison)." On a fly-leaf further: "Fatal Accidents from Permanganate of Potash (Poison), often erroneously substituted for Condy's Fluid." A list of fatalities by potassium permanganate is also given, and we are also informed that "Condy's Fluid is absolutely Non-poisonous." So that, from the proprietor's point of view, there is a serious difference between the two oxidizers. I submitted Condy's fluid to experiment in the same way that I am accustomed to follow when I use a 1 per cent. solution of potassium permanganate. A cubic centimetre of Condy's fluid was put into a flask, 6 c.cm. of dilute sulphuric acid added, and the whole diluted with water to 100 c.cm. Of this solution, 10 c.cm. were used in a small flask, and the oxidizables in solution added to complete decolorization, the flask being gently shaken. Such is my method for all oxidizables—tannin, morphine, quinine, cinchona alkaloids, and all albumens—half-minute experiments.

I found that Condy's fluid would serve to estimate albumens, uric acid, solutions of morphine, etc., in the same way as solution of potassium permanganate, although somewhat stronger than a 1 per cent. solution. Putting 4 c.cm. of Condy's fluid into a small phial and 1 c.cm. of dilute sulphuric acid, I found at least four degrees of temperature before exhaustion, when glucose, morphine, alcohol, etc., were added. So I can answer Dr. Macdonald's question, and say, I do not think that potassium permanganate has chemically any specific advantage over Condy's fluid as an oxidizing agent for morphine. And as I have included albumens quantitatively and otherwise in my experiments, I am of opinion that wherever we find at our disposal Condy's fluid we can use it for the occasion as a co-ordinate of potassium permanganate—that is, application for bites of animals; and that as 1 grain of potassium permanganate breaks up 6 grains of water-free albuminoid or about 40 grains of white of egg or muscular tissue, so Condy's fluid applied should oxidize—that is, profoundly modify—half its volume of muscular or albuminous tissues. Again, for the estimation of glucose, morphine tablets, alcohol, citrates, lactates, etc., described at length in the BRITISH MEDICAL JOURNAL, July 16th, 1910, Condy's fluid should also serve the purpose.

As regards the "laborious work" referred to by Dr. Macdonald, it is even a labour to read it, although I wrote it, but it is, I venture to say, almost necessary for writers of books on antidotes and poisons, and for those who seek other than the present physiological antidotes to some plant poisons, contained in the form of alkaloids as distinct from albuminoidal poisons. For urea non-oxidizable is easily broken up by chlorinated soda, and hyoscine, hyoscyamine, cocaine, atropine, and crystallized aconitine may be equally responsive, as urea, to certain oxidizers, although they resist permanganate. Certainly, much of the work given in the forty (about) serial articles should be incorporated in modern books on poisons. Especially as many of the synthetic products, exalgine, etc., are studied, also the effects of the oxidizer heated, when it is more powerful. The serial articles are in the *Medical Times and Hospital Gazette* from April 21st, 1894, to May, 1896.

Finally, I am not so sceptical of the efficacy of bowel lavage as Dr. Macdonald, but I certainly do not myself understand that potassium permanganate injected hypodermically can act as an antidote. Yet experimental results suggest this method as effective. So far I have not been able to get at the time differences of the oxidizer in these cases. All albumens, uric acid, quinine, morphine, vegetable colours, etc., are all apparently instantly oxidized by permanganate; therefore I do not see otherwise than that albuminous mixtures with morphine are both oxidized immediately, and therefore there is no selective effects, and Dr. Macdonald is quite right in thinking, in spite of my work, I am not prepared to maintain that permanganate is a "physiological" antidote, or may I say specific antidote? We want very much more work on the subject.

With respect to the case described by Dr. Walter Dickson (BRITISH MEDICAL JOURNAL, March 30th), I suppose that "relative toxicity" might at least be viewed as relative absorption, and therefore the irrigation in his case, as well as in that of Dr. Macdonald's, did do good, as well as the stomach application and the administration of oxygen, for I can recollect a case of recovery after nearly an ounce of chlorodyne by oxygen inhalation. Would Dr. Walter Dickson's case have recovered if he had omitted the bowel lavage?

I know that whilst I was studying the subject of antidote to alkaloid poisons that I was very pleased to read of an experiment which showed that at least on the cadaver we could *per rectum* irrigate the whole of the alimentary canal, although I do not know whether this has been done on the living body.

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